




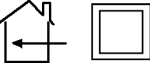
GARDTEC 872 ***Control Panel***

Installation Instructions

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IMPORTANT!

Input:	AC230V +/-10% ~50Hz 125mA Max. 35W Max
	Nominal Temp Range: 0 - 50°C
	GardTec 872 Metal Versions For Indoor Use Only
	GardTec 872 Plastic Versions For Indoor Use Only

This equipment is intended only for use as a Security Alarm Control Panel. Adequate ventilation away from heat and humidity must be provided. The unit must be fixed securely to a non-flammable surface using suitable fixings.

All mains wiring must be to BS7671 (1992) IEEE wiring regulations (or appropriate international regulatory standards). See Mains Supply Connection section within this manual for more detailed instructions.

All wiring must be protected from sharp or jagged edges.

All Low voltage (alarm) wiring must be to the appropriate international regulatory standards and comply to good wiring practice. It should not be possible for the Low Voltage wiring to touch the Mains wiring.

Replacement fuses should be of the same type and rating conforming to IEC 127.

The maximum current draw from the unit for all output combinations **must not exceed 1Amp**.

The unit is intended for use with a suitable re-chargeable lead acid battery permanently connected to the appropriate terminals.

All documentation and manuals must be thoroughly read by suitably qualified installation personnel prior to installation.

The unit has no user serviceable parts inside. Internal access should only be by suitably qualified personnel.

GardTec 872 Metal Versions

The unit must be Earthed. It is the responsibility of the installation engineer to ensure that the earth connection to the unit lid is good on completion of the installation or after service.

GardTec 872 Plastic Versions

Provision is provided for an earth connection within the mains input connector block, this connection is for protection of the wiring only and is not functional for the unit.

1 INTRODUCTION

The GardTec 872 control panel consists of two main parts, The master control panel and the keypad(s). The master control panel is a blank end station if the metal version is used or, the keypad may be mounted on board if the polycarbonate version is used with standard type keypads. Various zone wiring modes may be used taking the maximum number of zones available on any one system to 144 zones with 7 areas with up to 99 user codes.

If required a Radio expansion cards may be fitted and up to two 8 channel receivers. These Radio expansion cards are compatible with a range of radio equipment.

If required up to two ID expander cards may be fitted instead of standard and radio expander card. Each ID expander cards will give up to 30 ID zones using industry standard ID biscuits or ID detectors. When using any expander cards the control panel zones are retained and are programmable as 8 (4 wire zones) or 16 (2 wire or 2 wire End of Line) zones

Ample room is provided within the master control panel housing for all the system wiring, Mains connections, Digicom, Modem or Red-Care communicator (fitting inside the metal version only) and a 7Ah SLA battery.

Uploading/Downloading capabilities are possible on all models within the range through the GardTec Modem and the GardTec Remote Software Package for a P.C. Facility is also provided for direct connection to a P.C via the GardTec Modem Patch Lead.

The capabilities of the GardTec *872 control panel* are endless and we strongly recommend that all the manuals (both engineer and user) are read and understood before any installation of the system is carried out. You will find that a little time spent now understanding the GardTec 872 will prove to be a great time saver for the future.

It must be stressed that the GardTec 872 is one system that is capable of being split into seven areas. Under no circumstances should you regard it as seven separate systems.

2 SYSTEM OVERVIEW

Codes

The GardTec 872 is capable of accepting up to 99 user codes plus 1 engineer code. Each of the user codes is allocated a code type (with the exception of user 1 that is always Master) at the time the code is programmed. 19 code types plus engineer are available, these are:-

Code Type	Code Type
Master (Default 5678)	Main 7
Cleaner	Area 4
Area 2	Area 5
Area 3	Area 6
Main 1	Area 7
Main 2	Control
Main 3	Set Only
Main 4	Main User
Main 5	Area 1
Main 6	

Engineer (Default 1234)

Note 1: User 1 will always be Master.

A full list of options that are available for the code types are given in the user manual. As a general guide for this section the codes for the GardTec 872 are split into two groups, Global and Area codes. Codes allocated to these groups are as follows:-

Global Codes (Controlling All Areas).

Master
Main
Set Only
Engineer

If any area is set, entering a global code (not Set Only or Cleaner) will unset all areas

If all areas are unset, entering a global code followed by YES (or code then NO YES if Engineer code is used) will give the option to set all areas.

The global codes with the exception of Set Only also have other options. More details of these options are given in the user manual.

Area Codes (Controlling Specific Areas)

Cleaner (Area 0)	
Area 2	Main 6
Area 3	Main 7
Main 1	Area 4
Main 2	Area 5
Main 3	Area 6
Main 4	Area 7
Main 5	Area 1

These area codes will only control their specific areas. Area codes are 'low level codes' and have no user options, they will however allow for the part setting of each area.

Areas 1 to 7 may have up to 3 part sets suites (groups of zones). If part set 1 is used zones programmed into the part 1 suite will be removed (omitted), if part set 2 is used zones programmed into the part 2 suite will be removed and if part set 3 is used zones programmed into both part 1 and part 2 suites will be removed, no programming is required for part 3 as it combines zones in part 1 and part 2.

It should be noted that the zones programmed into a part set suite are programmed by the engineer and not the user.

To set an area simply enter the required area code (Press YES if a Main Area Code is used) and exit the area.

To part set an area enter the area code followed by NO and the part set number required (1, 2 or 3). If Main Area type code is used enter code followed by part set number.

To unset an area enter the area code.

Cleaner Code (part set 0)

The Cleaner code or part set 0 acts in a different way to the other area codes. To set the system and remove the cleaner zones start to set the system followed by YES 0 This will set the system or area and remove the cleaner zones.

If a cleaner code is now entered the cleaner zones will also be set.

If a cleaner code is entered when the system is fully set or area set only the cleaner zones will be unset.

It should be noted that any entry/exit zones that are removed or unset via the cleaner code or part set 0 will chime when violated. This is to prevent other users straying into protected areas without warning.

More details of codes and using the system are given in the relevant sections of this manual, and in the user manuals.

Duress

If Duress is turned on adding 1 to the first digit of any user code will send a duress signal to central station (e.g. normal code = 5678 the duress code for this would be 6678). Alternatively Duress 7 may be turned on, if this is done any code programmed as User number 7 will be the duress code.

Zone Allocation to Areas

Whilst within the zone programming section zones may be allocated to areas. This may be one single area or multiple (common) areas.

If a zone is allocated to more than one area it is then a common area zone and the following logic is applied:-

If any area that is assigned to the zone is unset then the zone **is not** active.

If all areas that are assigned to a zone are set then the zone **is** active.

If any area that is assigned to the zone is in exit then the zone is also in exit (zone type will still apply).

If any area that is assigned to the zone is in entry then the zone is also in entry (zone type will still apply).

Zones

The control panel is supplied with 8 four wire zones (two wires for zone & two wires for tamper).

If required this configuration may be programmed for 16 two wire zones. In this case, two zones should be reserved for global tampers and the remaining 14 zones are then programmable for the desired zone types.

The control panel zones may also be programmed as 16 EOL (End Of Line resistor) zones. This configuration gives the highest possible zone wiring security and a maximum of ten detectors may be wired on to each zone when this option is selected. Resistors required for EOL operation are supplied with the control panel.

When using EOL zones each detector has a 6K8 resistor in parallel with the alarm contacts and there is a 4K7 resistor in series with the two zone wires. This gives both alarm and tamper protection from a single pair of wires. To make full use of this security feature the 4K7 resistor must be fitted to the furthest most point in the loop.

Zone Expansion

An expansion path is available through zone expander boards. Each expander board being programmable for 4 x four wire zones, 8 x two wire zones or 8x two wire EOL zones. Up to sixteen expander boards may be fitted to a GardTec 872 giving a total of 144 zones when configured as 2 wire or 2 wire EOL zones. Each expander board and the control panel zones may use differing wiring configurations. If required up to two radio modules that are compatible with Rokonet radio equipment may be fitted

Expander cards may be fitted in locations away from the master control panel.

More details of zone options are given in the relevant sections in this manual.

ID Zone Expansion

As an alternative to ZEX expansion up to two ID expander boards may be fitted. Each ID expander board will accept up to 30 standard ID biscuits/devices. ID biscuits may be used with all standard detection devices. This system allows either single leg or ring wiring using standard alarm cable, detectors may, if required be 'teed' of the leg or ring. This expansion method can offer considerable savings of cable and labour

One ID expander card may be plugged on to the control panel PCB (not with onboard RKP) with the other remote. Alternatively both ID expander may be mounted remote from the control panel. If this method of expansion is used standard zone expanders or radio modules cannot be used.

Zone Descriptions

Up to sixteen characters may be used for zone descriptions on the LCD keypad. The description that you allocate to a zone will also be applied to the tamper of that zone. If the cause of an alarm is through a zone tamper the description will be shortened to 13 characters on the display, the last three characters being replaced with <space>T!

The zone descriptor is displayed whilst viewing the cause of an alarm, viewing the log, if a zone is violated during exit and when programming zone descriptors. While viewing the zone in the log press 5 to display the zone number.

User Names

Each user (with the exception of the engineer) may be allocated a user name of up to nine characters. This name will be shown if the system is being set with a master or main code type and whilst viewing the log.

Keypads

The GardTec 872 control panel may be operated via any Gardtec 800 Series LCD keypads. Several types of keypad are currently available: Standard or Contour 32 character LCD. Standard keypads will also require a remote housing if not fitted onto the main control panel. This housing may be fitted in any one of three orientations.

Programming of the system must be carried out through and LCD type keypad.

The GardTec 872 is also ACE compatible. ACE allows for the setting, part setting, unsetting and resetting (Code level dependant) of the system via Infra-Red remote control keyfobs. ACE is available as a stand alone receiver or built into a RKP

LCD, LED and ACE keypads may be mixed on the same system allowing for total flexibility in control of the system. A maximum of eight keypads/ACE (inclusive of ACE) units may be fitted to the GardTec 872. A maximum of 4 stand alone ACE units may be fitted.

Uploading/Downloading & Remote System Management

The GardTec 872 control panel is capable of uploading and downloading from both a primary location and secondary location (e.g Laptop computer), this helps reduce maintenance costs should there be a need to update the system program or a customer on site having difficulties.

This uploading/downloading capability has the ability to allow for complete Remote System Management. One example of the time that can be saved is programming zone descriptors on a fully populated system (144 zones), if was to take just one minute to program each zone descriptor this would take 144 minutes, via the GardTec Remote software package this would only take a few minutes.

3 SYSTEM INSTALLATION

Planning The System

Time should be taken to plan the system. Because the master control panel may be a blank end station it may be looked upon as an engineer box requiring no attention from the end user. When choosing a location for the master control panel consideration should be given to the following:-

The routing of cables, e.g detection, sounders, mains, telephone line, keypads etc.

Area aesthetics in view of the above.

Future access by service personnel.

Consideration also needs to be given as to the positioning of the remote keypads, wiring for the keypads may be 'star' or 'daisy chain' format (see Keypad Wiring for more details). When choosing locations for remote keypads the following points should be observed:-

The proximity of the keypad to the entry/exit point(s).

The operation of the keypad.

The readability of the display.

The wiring route to the keypad.

Where ACE units are used a clear line of sight from the transmitter to the receiver at a distance in the region of 3 to 5 metres.

The metal version of the master control panel has ample trunking and conduit entries at the top and the bottom of the housing, in addition to these entries there is also a 5mm stand-off at the rear of the panel to allow for side cable entries.

Control Panel Mounting

Remove the two lid securing screws (single screw on polycarbonate version see Fig1) then (pushing in side buttons on polycarbonate version) pull the lid forwards and lift clear of the lid securing lip. Store the lid in a safe place.

Offer the base to the wall and using it as a template mark the four fixing point noting (on the metal version) that the lid securing lip should be at the bottom.

Store the base in a safe place then drill the wall. **Under no circumstances should you drill through the base.**

Before mounting the base to the wall remove any trunking or conduit entries that you require as knockouts.

Mount the base to the wall using 30mm No.10 screws and suitable rawl plugs.

After the installation has been completed refit the lid and secure with the retaining screw(s).

Keypad Mounting

The standard GardTec *800 Series* keypad is available with a 32 character LCD display or with a twin seven segment LED display. All these keypads require the GardTec *800 Series* RKP Housing Part No. 01-063 unless the keypad is to be mounted within the polycarbonate control panel (see Fig 1). Contour keypads are supplied as a complete unit for remote mounting.

This housing has been designed to allow mounting in one of three positions. These are:-

With the hinged flap to the left.	(See Fig 2a.)	Use fixing points A, B, D, E placing edge of board under tab F
-----------------------------------	---------------	---

With the hinged flap to the right.	(See Fig 2b.)	Use fixing points A, C, D, E
------------------------------------	---------------	------------------------------

With the hinged flap to the bottom.	(See Fig 3.)	Use fixing points A, B, D, E placing edge of board under tab G
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The base of the housing should be fixed to the wall using 25mm x No.8 screws and suitable rawl plugs in three positions.

After the keypad has been mounted in the base, the correct spring (supplied with the keypad) should be pushed onto the tamper switch (see Figs 2 & 3 for spring details).

Before replacing the cover move the ident jumper to the correct position.

Provided that the panel is mounted horizontally the keypad may also be mounted onboard the polycarbonate control panel (see Fig1) by removing the keypad blanking plate in the control panel cover. It should be noted that any zone expanders, ID expanders or output expanders cannot be fitted onboard if this option is chosen.

Fig 1 Polycarbonate Case with Onboard Keypad Mounting Details

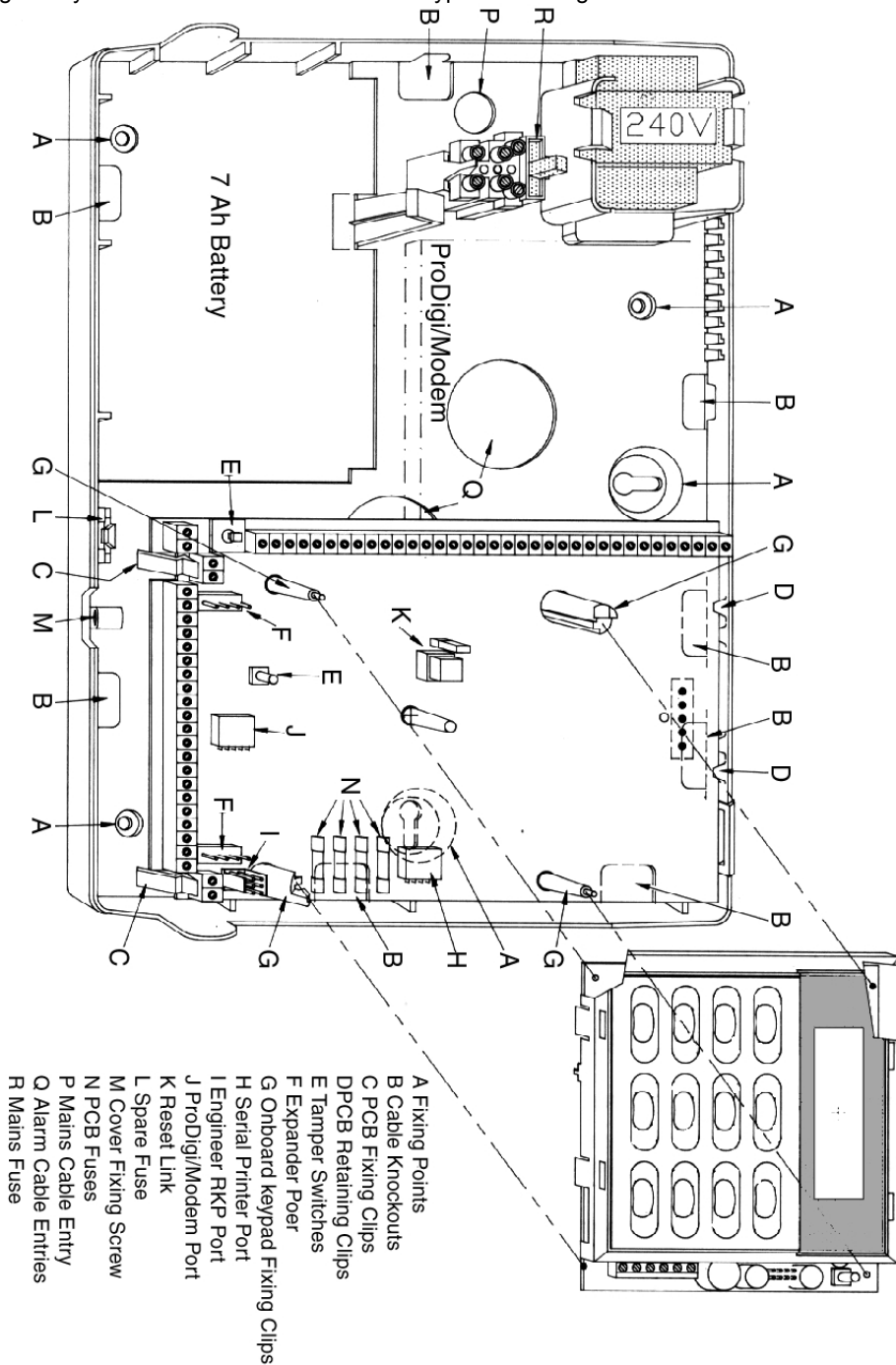
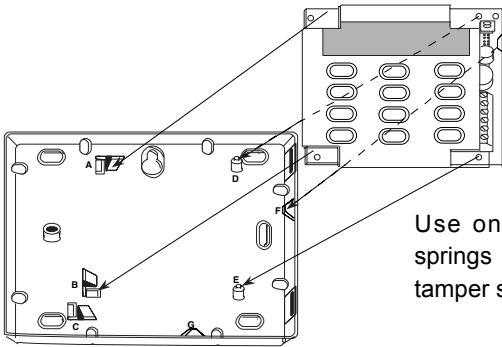
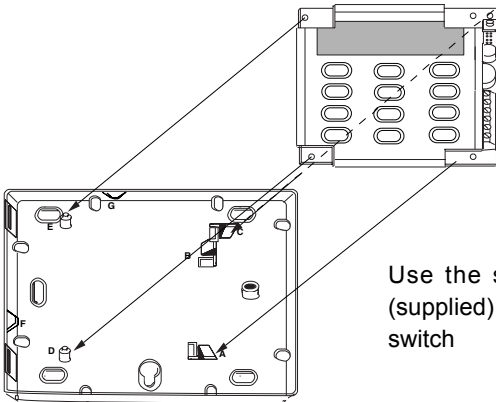


Fig 2a. Flap to left
Standard RKP with
Housing Base



Use one of the longer
springs (supplied) on the
tamper switch

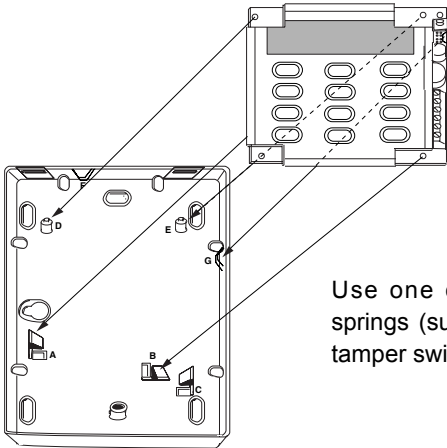
Fig 2b. Flap to right
Standard RKP with
Housing Base



Use the shorter spring
(supplied) on the tamper
switch

Fig 3. Flap to bottom
Standard RKP with

Housing Base



Use one of the longer
springs (supplied) on the
tamper switch

Fig 4 Contour RKP



Lower Flap to reveal single cover fixing screw

A stand alone ACE receiver is also available (max 4 per system using Multi option). This receiver will allow for the setting, part setting, unsetting, resetting (if programmed) and activation of alert keys 1 & 3.

To mount the ACE receiver remove the front retaining screw of the receiver that is situated on the underside of the unit, pull the bottom edge of the cover forwards and upwards in one movement. The PCB may now be removed by unclipping it at the bottom edge and lifting clear of the base.

Fig 5. ACE Receiver



The base should be fixed to the wall in three positions using 30mm x No.6 screws and suitable rawl plugs.

It should be noted that the ACE receiver may only be used as keypad ident 1 or 2.

The new Contour range of stylish remote keypads are also available for the full GardTec 872 control panel. These keypads are designed to be fitted remote from the main control panel and both the LED and LCD versions are available with ACE as standard.

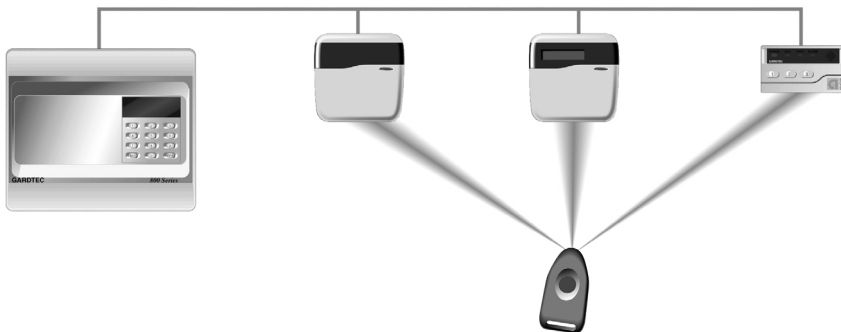


Fig 5a GardTec ACE

4 WIRING CONNECTIONS

With the exception of the mains wiring all interconnections should be made with multicore 7/02 alarm cable.

Good wiring practice should be observed throughout the installation and the following tips may prove useful.

Never run alarm cables parallel to mains cables, telephone cables or any other cables that may be carrying inductive loads

Whenever you have to cross mains cables with alarm cables ensure that you do so at 90°

Always wire the mains connection for the control panel back to the consumer unit via a 3A fused spur.

Never tap into ring main circuits that have fridges/freezers on them.

Never tap into lighting circuits that have fluorescent lighting units on them.

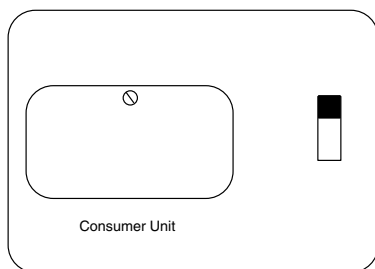
Mains Supply Connection

Mains Wiring only to be carried out by suitably qualified personnel.

The mains connection for the GardTec 872 should be as shown in Fig 6.

Fig 6.

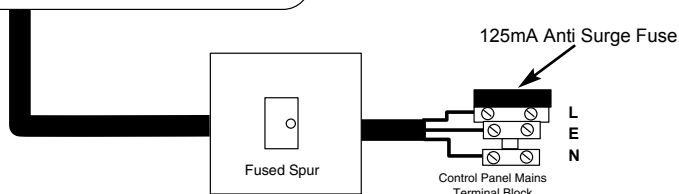
Warning the GardTec 872 control panel MUST BE EARTHED.



Mains (Twin & Earth) Connection Colours

Live	=	Red
Neutral	=	Black
Earth	=	Copper

Yellow/Green sleeving should be used for Copper Earth Conductor



It should not be possible for mains wiring to touch low voltage wiring

Keypad Wiring

Keypads may be wired in 'Star' format (each keypad being wired back to the master control panel) see Fig 7a, or 'Daisy Chain' format (from the control panel to the first keypad then onto the second keypad etc) see Fig 7b. It is also possible to wire the keypads with a mix of 'Star' and 'Daisy Chain' formats see Fig 8.

Fig 7a. 'Star' format wiring.

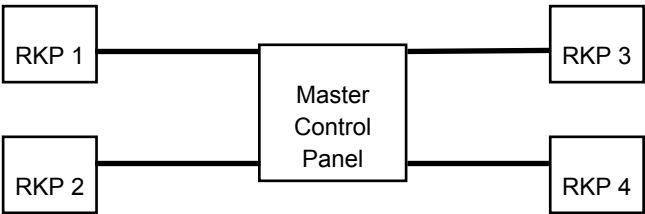


Fig 7b. 'Daisy Chain' format wiring.

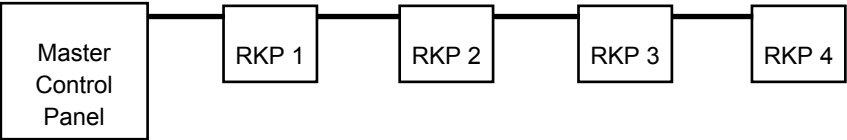
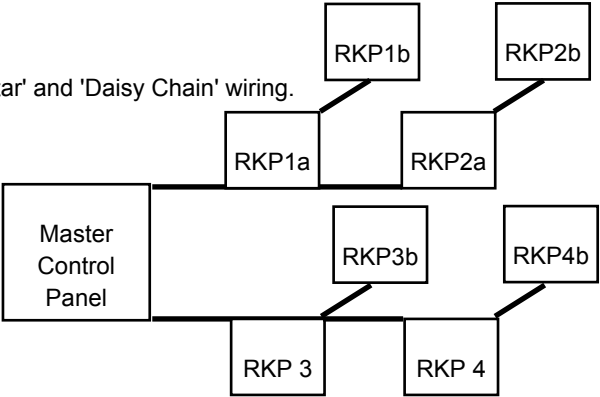


Fig 8. Mix of 'Star' and 'Daisy Chain' wiring.



8 RKPs example using multi option

Note: All keypads need to be numbered via the onboard ident jumper switches.

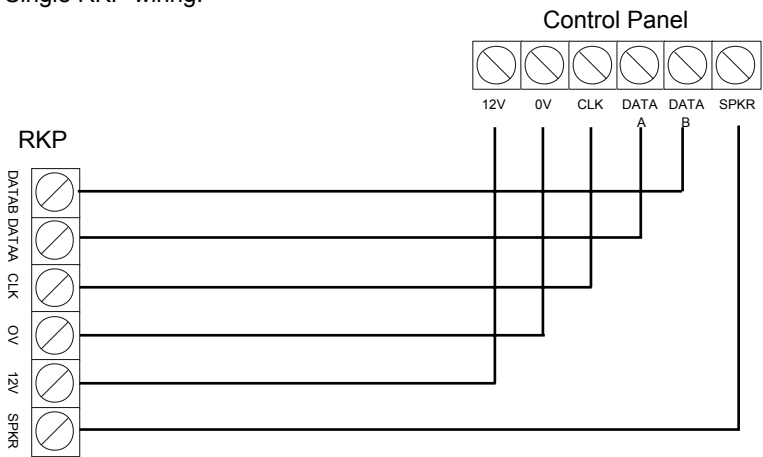
Note: ACE receivers count as RKPs and may only be numbered as RKP 1 or 2 (unless built into RKP).

Keypad Terminal Connections

Some keypads that are compatible with other Gardiner Technology control panels may have additional markings as well as the GardTec 872 legends. These additional markings are disregarded within this manual.

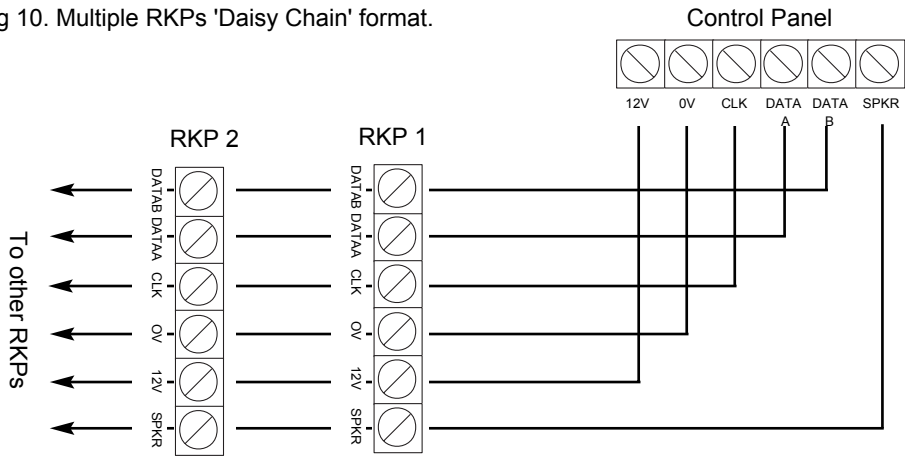
The keypad port on the master control panel is situated on the bottom edge of the PCB towards the right hand side. Wiring to the RKP(s) is terminal to terminal as shown in the following illustrations.

Fig 9. Single RKP wiring.



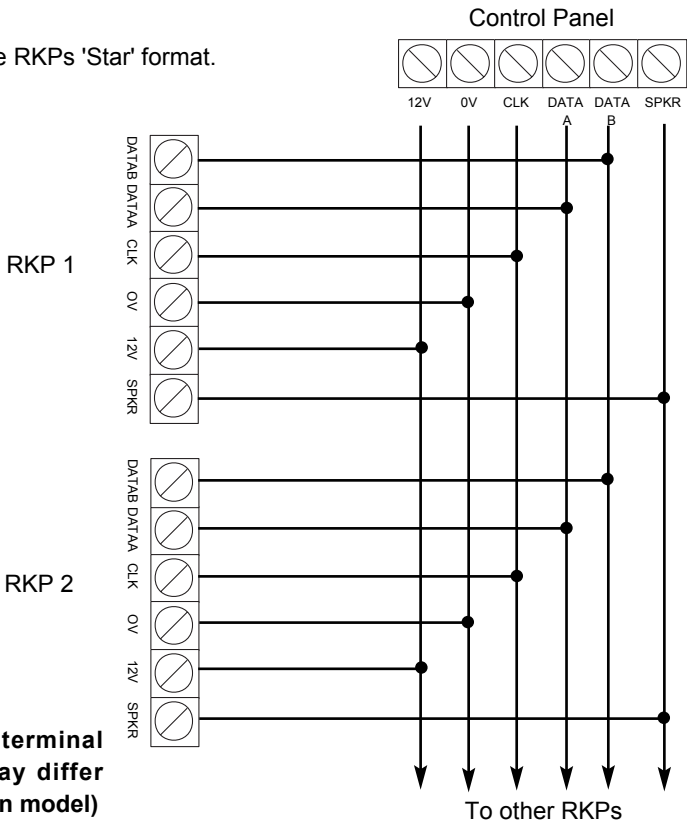
NOTE: RKP terminal positions may differ (dependent on model)

Fig 10. Multiple RKPs 'Daisy Chain' format.



NOTE: RKP terminal positions may differ (dependent on model)

Fig 11. Multiple RKPs 'Star' format.



NOTE: RKP terminal positions may differ (dependent on model)

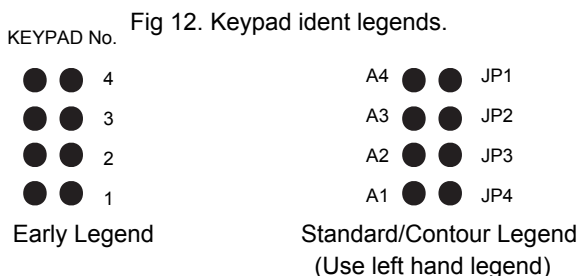
Keypad Jumper Options

Keypad Numbering (ident)

All keypads must have the ident jumper in position in order that the system can recognise the keypad it is communicating with. This information is written to the log as the system is set and unset. If greater than four RKPs are required on the 872 the Multi Keypad option should be programmed to On, two keypads may then share the same ident. It should be noted that LCD & LED RKPs may not share the same ident.

LCD and LED versions

Four jumper links are fitted on the LCD and LED versions of the keypad. On earlier Standard keypads the legend was slightly different as shown in Fig 12.



Note: Contour keypads fitted with ACE have two additional jumpers for the ACE functions, these are:-

US This jumper is the user select. With the jumper link removed each ACE key fob will occupy one user code from the system, this is termed as high security mode.

With the jumper link in position the ACE will occupy one user code from the system but up to 28 key fobs may be programmed into the ACE, this is normal security mode.

NVM With this jumper in position the ACE NVM contents will be cleared when the unit is powered up. All codes will be lost
On first power up this jumper should be on and then removed after.

The ident jumper should be positioned across the pins in one of the positions **before the system is powered up**.

Note: Instructions for how to program keyfobs to the ACE and using ACE are contained within the LED user manual

ACE Receiver Wiring & Jumper Options

ACE is also available as a stand alone receiver. The wiring for the receiver is the same as for the RKP(s) with the exception that the speaker wiring terminal on the ACE is marked as SP- and **not** SPKR.

The ACE receiver is link selectable as unit No.1 or unit No.2 and it is permissible to have two units sharing the same ident.

Five options are available that are selected with jumper links. These options are as follows.

JP1 (US)

This jumper is the user select. With the jumper link removed each ACE key fob will occupy one user code from the system, this is termed as high security mode.

With the jumper link in position the ACE will occupy one user code from the system but up to 28 key fobs may be programmed into the ACE, this is normal security mode.

JP2 (RP)

This jumper is only used when the ACE is fitted to the GardTec *800 Series* control panels and is used to select the ACE ident as 1 or 2 . This ident should be viewed as the RKP ident. With the jumper off the ACE will be remote device two, with the jumper fitted the ACE will be device number one.

JP3 (PN) if fitted

This jumper is used to select the panel type when ACE is used with the GardTec *350+* or GardTec *580* control panels. **The jumper has no use when used with the GardTec 800 Series and should be left in position.**

JP4 (RST)

The ACE has a Non-Volatile Memory (NVM). If power is applied to the unit with this jumper in position, the memory contents will be erased. When the unit is first powered up, this jumper should be in position for at least 5 seconds. **After this initial period the jumper link should be removed.**

If a reset of the ACE is required (all fobs to be deleted) this jumper link should be refitted and the unit re-powered.

JP5 (EOL) if fitted

This jumper is the End Of Line jumper and is applicable to the GardTec *350+* and GardTec *580* only. **This jumper MUST BE REMOVED when used with the GardTec 800 Series.**

Note: Ensure all links are in desired position before powering up the ACE.

Output Connections

The output connections for the GardTec 872 are situated along the bottom edge of the main PCB in the master control panel.

Warning:-

It should be noted that the total output current available for the GardTec 872 is 1 Amp. Any attempt to draw a total current greater than this could result in serious damage to the control panel that is not covered by the manufacturers warranty.

Below is a description of each terminal. The order given is the same as the terminal order on the PCB looking from left to right.

Output Terminal Descriptions

RELAY COMM

A 24V 1Amp ^{*1} changeover relay is provided on the GardTec 872 PCB. This relay is fully programmable (refer to Programmable Options Description). The relay contacts are voltage free. This terminal is the common connection (see Fig. 13).

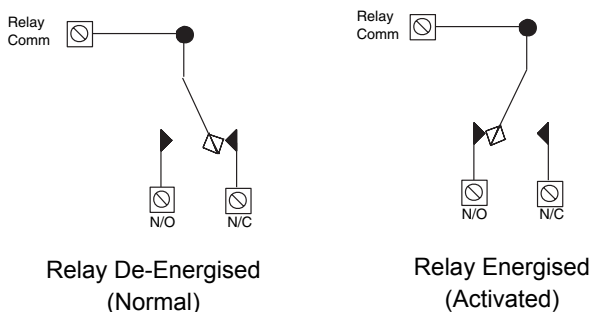
N/O

Normally Open connection for onboard relay (see Fig. 13).

N/C

Normally Closed connection for onboard relay (see Fig. 13).

Fig. 13 Onboard Relay Operation



^{*1} **No attempt should be made to exceed the stated current and the 1 Amp maximum current draw from the control panel must be taken into consideration.**

BATT + & -

Factory fitted Sealed Lead Acid battery connections. The GardTec 872 is suitable for the installation of all the popular sizes of alarm batteries. Suggested sizes would be:-

12V 1.2Ah	Suitable only for the smallest installations.
12V 2.0Ah	Suitable only for small installations.
12V 3.0Ah	Suitable for small to medium size installations.
12V 7.0Ah	Suitable for all installations.

Reference should be made to current policies to determine the actual battery capacity requirements for your system. As a general rule:-

Calculate the total quiescent current draw of the system including control panel, RKPs, communicator, detectors and any other auxiliary equipment then use this in the equation shown:-

$$\text{Quiescent Current} \times 8 \text{ hours} = \text{Minimum Battery Size}$$

(May change with new European Standards)

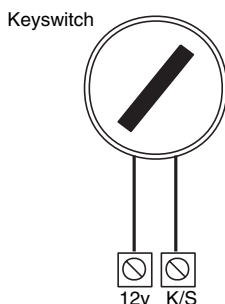
The actual size of the battery should be made up to the nearest size available.

K/S

Keyswitch input. If required the GardTec 872 may be operated by a keyswitch. Operation is by applying 12V to this terminal (see Fig. 14). The mode of operation is dependent on how the keyswitch option is programmed (refer to Programmable Options Description and also see Remote Reset). Keyswitch will set all areas refer to Zone Type Keyswitch option for area Keyswitch.

Note:- GardTec 872 zones may also be programmed for keyswitch setting.

Fig. 14 Keyswitch Connection



Note: Keyswitch type may be
Normal (Open/Close)
or Biased (Momentary)
or Locked (keypads lock when used)

See also Remote Reset

ZONE KEYSWITCH OPTION

Up to eight zones may be allocated as zone keyswitches. This option is carried out via the 'Program Zone Type' option. Either Normal or Biased keyswitches may be used and the correct option for the keyswitch you are using should be chosen during programming. Will act on area only refer to Keyswitch Terminal for Global Setting.

Wiring for the keyswitch should be across the AZ pair of the zone, the TZ pair of the zone may be used in the normal manner.

In order for this keyswitch option to operate there must be an Area User code allocated for the area that the keyswitch is intended to control, e.g if allocated to control area 2 then an area 2 code needs to be programmed on to the system. Will only work on single areas.

In order that the keyswitch operations are recorded to the log in the correct manner we would suggest that the highest user codes (e.g 97 - 99 for 3 keyswitches) are used. The following example shows a typical format for the user names.

User Name (example)	or	User Name(example)	Area	User No.
DOOR KEY	or	MARY KEY	Area 1	User 97
STORES KEY	or	FRED KEY	Area 2	User 98
SALES	or	HARRY KEY	Area 3	User 99

Because the GardTec 872 reads the list of users from high to low the log will show for example Set MARY KEY A1 hh/mm/dd/mm. If User numbers are not reserved or allocated then the system will use the first code available (reading high to low) for that particular area set.

Space has been made at the start of the User manual to give indication to an end user of what user codes, if any have been reserved for this purpose. Please take time to fill in this section for end user reference.

0V (DIGI)

0V (-VE) connection to a Digital communicator or Red-Care STU

12V (DIGI)

12V (+VE) connection to a Digital communicator or RED-Care STU. The output from this terminal is protected by the GARD fuse (400mA)* on the main PCB.

LINE FAULT

This is the Line Fault input terminal. The terminal should be held @12V by the communicator and swing to 0V to produce a Line Fault condition on the control panel. If Line Fault is not used the factory fitted resistor to 12V should be left in place.

Note: To activate this terminal the programmable option 'DIGICOM TYPE' must be programmed to 'NORMAL'.

Note: If the GardTec ProDigi or Modem is to be used on serial comms (plugged into the main PCB) the factory fitted link from this terminal to 12V MUST be removed.

Note: When DigiModem is used the L/F & 12Hr Terminals cannot be used as inputs/outputs.

REMOTE RESET

(Note This option may use the Linefault or KS terminal). The Line Fault or the K/S terminal (dependant on option 127 Remote Reset Source) also doubles as the Remote Reset input (normally found on Red-Care STUs sometimes termed as Remote Signal Path). To use this feature the 'REMOTE RESET' option should be programmed to ON (option 39). After an alarm the control panel will reset when 12V is applied to this terminal.

The feature allows the use of RedCare units with Remote Reset even when a Modem is connected. It should be noted that the triggers for the RedCare should be from the P.A, D1 & D2 terminal. **Do not use the 12Hr or L/F terminal as they double as a data connection for the Modem.**

The Remote Reset feature may also be used to auto-reset the control panel after an alarm. This must only be used on non BS 4737 systems when the panel is being used for purposes other than security. The auto-reset is achieved by leaving the factory fitted link in position and turning the 'REMOTE RESET' (option 39) ON

PA

This terminal is the Digicom output for PA (Personal Attack)and would normally be connected to channel 2 of a communicator. The output is open collector and has a maximum current sink of 50mA^{*1} ^{*2}

12HR

This terminal is the Digicom output for 12HR (Alarm)and would normally be connected to channel 3. The output is open collector and has a maximum current sink of 50mA^{*1} ^{*2}

If the ProDigi or Modem are not used PA & 12Hr are programmable under the option D3 & D4

Note: When testing Digicom Channels via menu 65 (Test Digicom Channels) and Digicom type Normal has been selected the display will show 1 2 3 4 with zeros under each number. In this instance 1 refers to D1 output. 2 refers to PA output (D3). 3 refers to 12Hr output (D4). 4 refers to D2 output.

^{*1} *No attempt should be made to exceed the stated current and the 1 Amp maximum current draw from the control panel must be taken into consideration.*

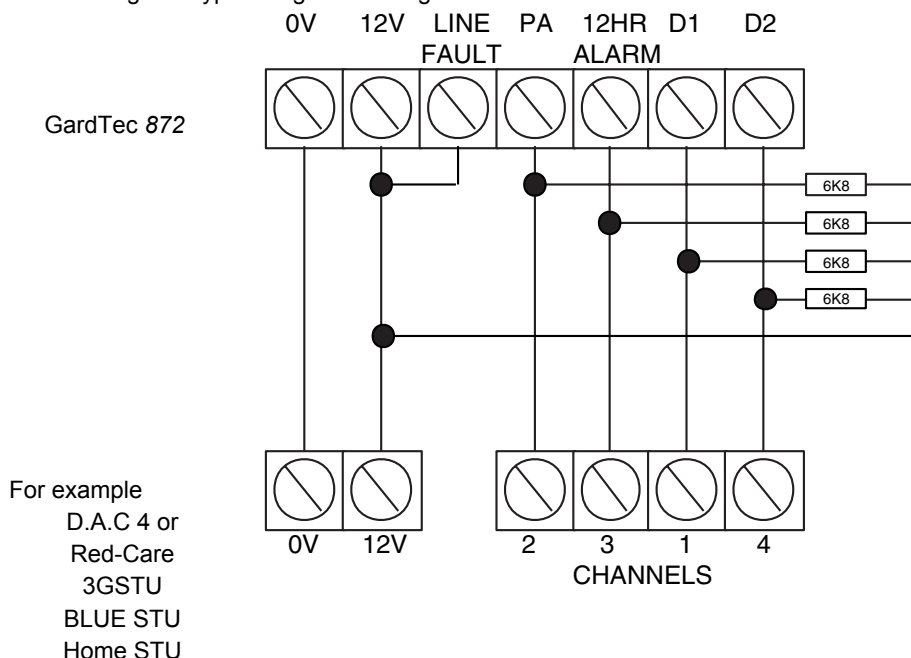
^{*2} *Some Digicoms may require a 6K8 pull-up resistor fitting between this output and 12V*

D1 & D2

These terminals are digicom outputs that are fully programmable by the engineer (see Programmable Options Description for more details). The outputs are open collector and have a maximum current sink of $50\text{mA}^{*1} \text{ }^{*2}$. On systems only using two channels or systems using the ProDigi or Modem D1 & D2 are free for other uses.

Note: The start polarity is of the Digicom port is programmable by the engineer.

Fig. 15 Typical Digicom Wiring



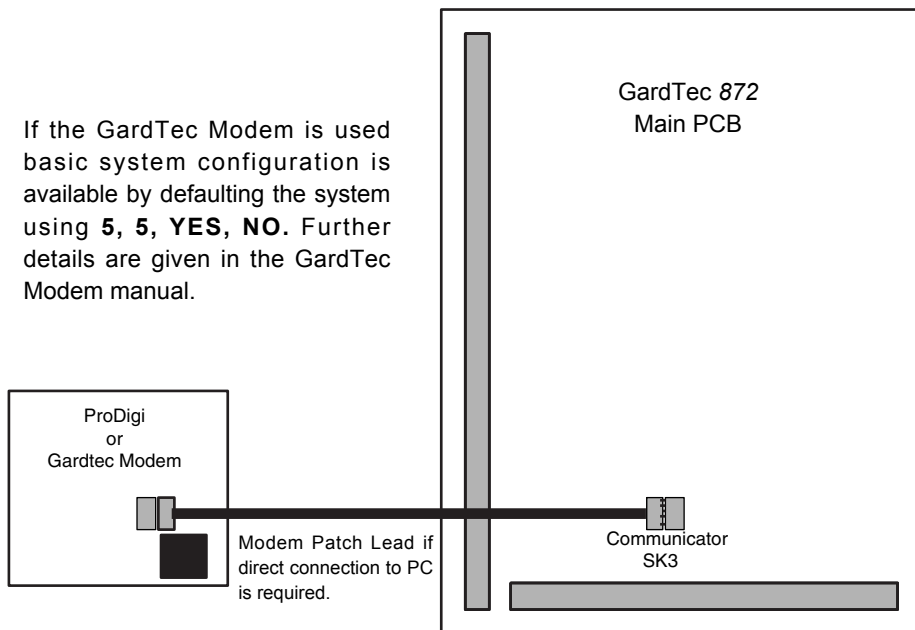
Notes: D1 should be programmed for FIRE (Chan1)
D2 should be programmed for OPEN/CLOSE (Chan4)
Program Digicom Type to NORMAL
6K8 resistors provide Pull-Up for open collector outputs

When ordering STU chips Pin 4 must not be inverted as this is catered for by the control panel.

^{*1} **No attempt should be made to exceed the stated current and the 1 Amp maximum current draw from the control panel must be taken into consideration.**

^{*2} **Some Digicoms may require a 6K8 pull-up resistor fitting between this output and 12V**

Fig. 16 ProDigi or GardTec Modem Wiring.



Note: Modem will give 8 channels and leave D1, D2 & D3 (PA term) free for other uses

For a ProDigi program Digicom Type to Gardiner

For Modem Mod+FF or MOD+PID

Remove link from 12V & Line Fault Terminals before connecting ProDigi/Modem

Both the ProDigi and GardTec Modem can be programmed direct from the GardTec 872 control panel

Modem Patch Lead

If the GardTec Modem patch lead is to be used for direct connection to a PC or Lap-Top It should be connected to SK3. **The factory fitted link between 12V & Line Fault must be removed.** Full instructions on use of the GardTec Modem Patch lead are supplied with the unit.

SW+ LATCH *New Feature this output is now fully programmable.*

This terminal is high (+12V) when the system is set and low (0V) when the system is unset. Typical use for this terminal would be the latch signal for PIRs and Shockgards etc. A maximum sink of 50mA^{*1} This terminal may be programmed for other uses.

DET RESET *New Feature this output is now fully programmable.*

This +VE supply terminal is provided for the types of detectors that require the removal of power to reset them. In the default mode the 12V supply from this terminal will pulse off for three seconds during the exit time. The terminal is also programmable for other uses (see Programmable Options Description for more details). A maximum current draw of 50mA^{*} is available. This terminal is programmable for other uses.

STROBE + | -

This pair of terminals provide power for the strobe light during and after an alarm. The negative terminal is switched. A maximum current of 1Amp^{*} can be switched with these terminals. This terminal is programmable for other uses. The terminal is redundant if the NovActive range of bell boxes is used.

BELL + | -

This pair of terminals provide power for the bell during an alarm. The negative terminal is switched. A maximum current draw of 1Amp^{*} is available from these terminals.

The positive terminal also provides the positive hold off for the SAB.

In SCB mode (see Programmable Options Description), the terminals stand at + & -. The negative terminal will change state to positive for the duration of the alarm.

It should be noted that the operation of the bell is influenced by the programmable options Bell Delay, Bell Ring Time and Number of Arms (see Programmable Options Descriptions for more details).

BELL HOLD -

This terminal is the negative tamper feed and also provides the negative Hold Off for the SAB.

The terminal has a factory fitted link fitted to the SAB TMP terminal in order to keep the bell tamper clear. **This link should be removed** as the bell wiring is connected.

SAB TMP

This terminal is the tamper return from the Bell Box. If unused the factory fitted link to Bell Hold- should be left in place.

^{*1} **No attempt should be made to exceed the stated current and the 1 Amp maximum current draw from the control panel must be taken into consideration..**

RKP 12V

This terminal provides the +12V supply for the keypads and ACE units (see Keypad Wiring for more detail). A maximum current draw of 0.5Amp*¹ is available from this terminal.

RKP 0V

This terminal is the 0V supply for the keypads and ACE units (see Keypad Wiring for more detail).

CLK (for fault finding the voltage on this terminal should be approx 5V)

This terminal is the Clock connection for the keypads and ACE units (see Keypad Wiring for more detail).

DATA A (for fault finding the voltage on this terminal should be approx 8V)

This terminal is the Data A connection for the keypads and ACE units (see Keypad Wiring for more detail).

DATA B (for fault finding the voltage on this terminal should be approx 6V)

This terminal is the Data B connection for the keypads and ACE units (see Keypad Wiring for more detail).

SPKR & SP+

These terminals are connected to any extension speakers (min impedance 16 Ohm) that are fitted. The SP+ is the common and SPKR is the output of the amplifier driver.

The SPKR terminal is also connected to the SPKR (speaker terminal) on the RKP(s).

The current drawn by any extension speakers needs to be calculated in the total system current. The current drawn by a 16 Ohm speaker would typically be 300mA.

Fig. 17 Single Speaker

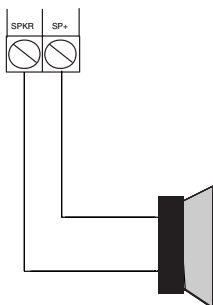
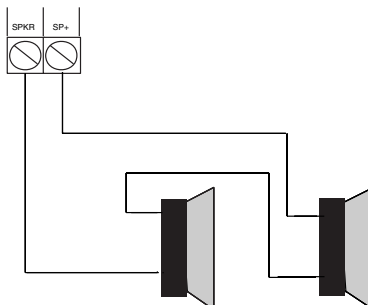


Fig. 18 Twin Speakers (wired in series)



Note: Minimum speaker impedance is 16 Ohm

*¹ *No attempt should be made to exceed the stated current and the 1 Amp maximum current draw from the control panel must be taken into consideration..*

Fig. 19 Typical output wiring

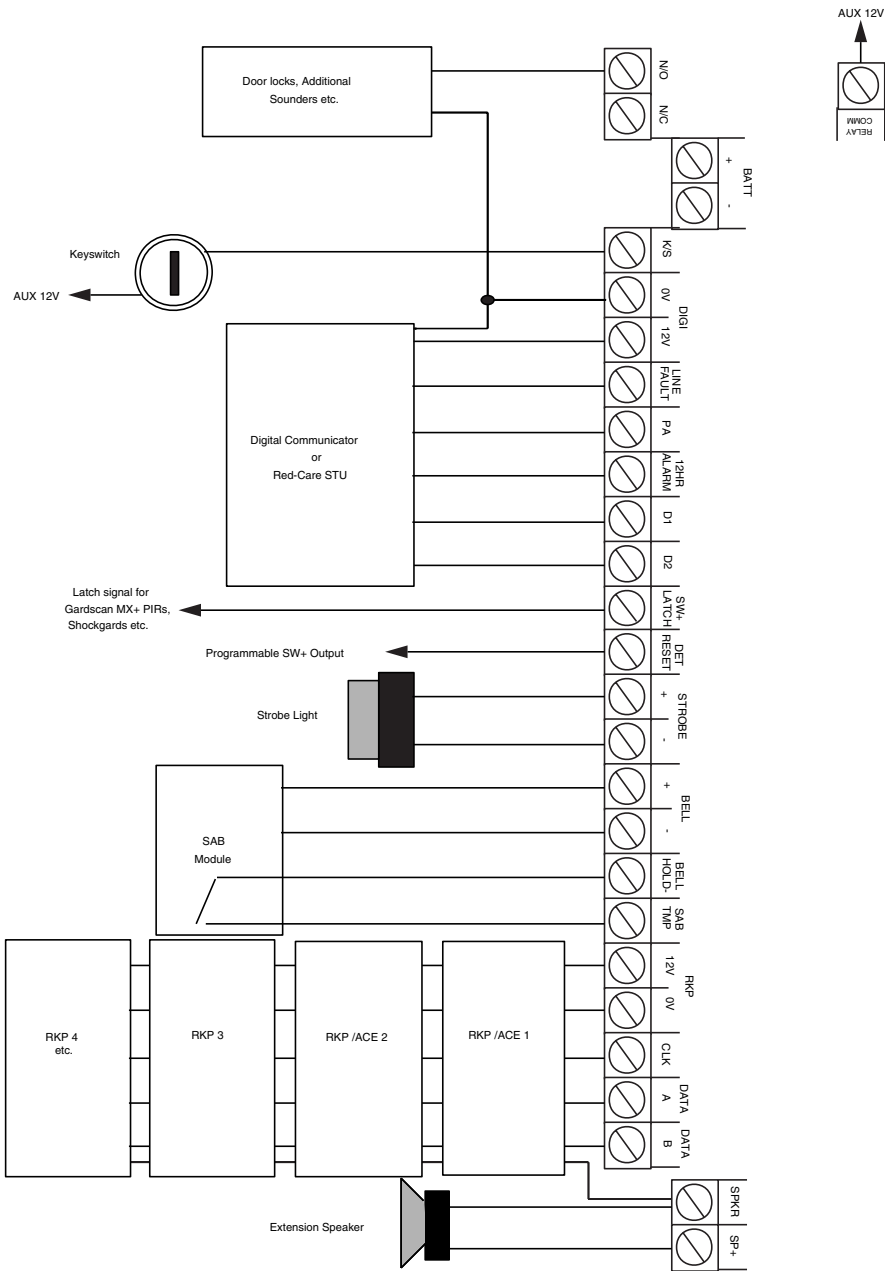


Fig. 20 Traditional bell box wiring.

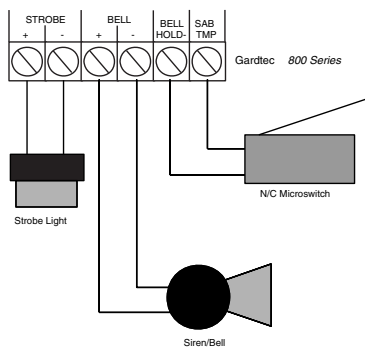
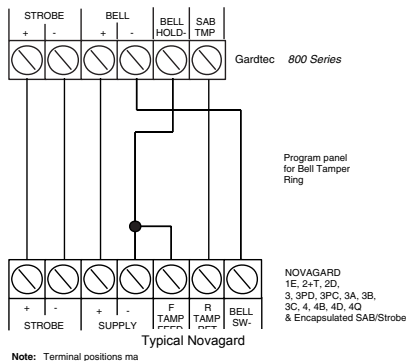


Fig. 21 Novagard wiring



The Gardtec 872 may be used with the Novagard Active range of external sounders. When used in Novagard Active mode additional programmable features and diagnostics are available even from a remote location using the Gardtec Remote Software package. Diagnostics help to identify failures or potential failures without the need to send an engineer on a site visit.

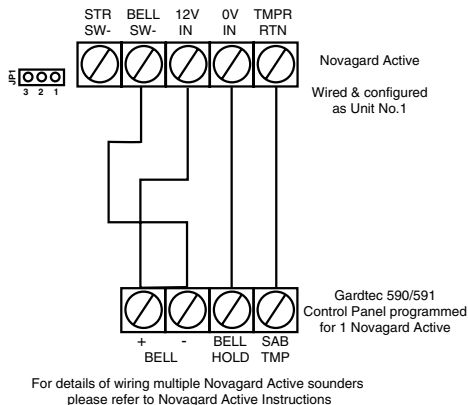
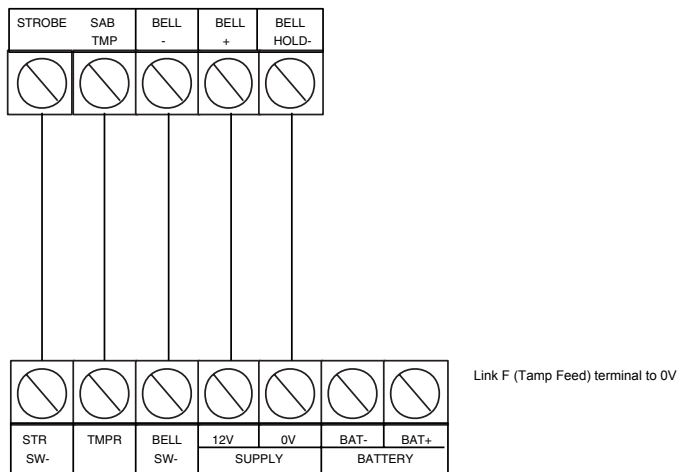


Fig. 22b Novagard Delta & Novagard Metal wiring.



Note: Terminal positions changed for clarity

Zone Connections (control panel 4 Wire option)

Three wiring methods are possible for the zones located on the main PCB in the GardTec 872 control panel. The first is 4 wire or normal type wiring, if this default option is chosen 8 double pole zones are available (8 alarm zones and 8 tamper zones).

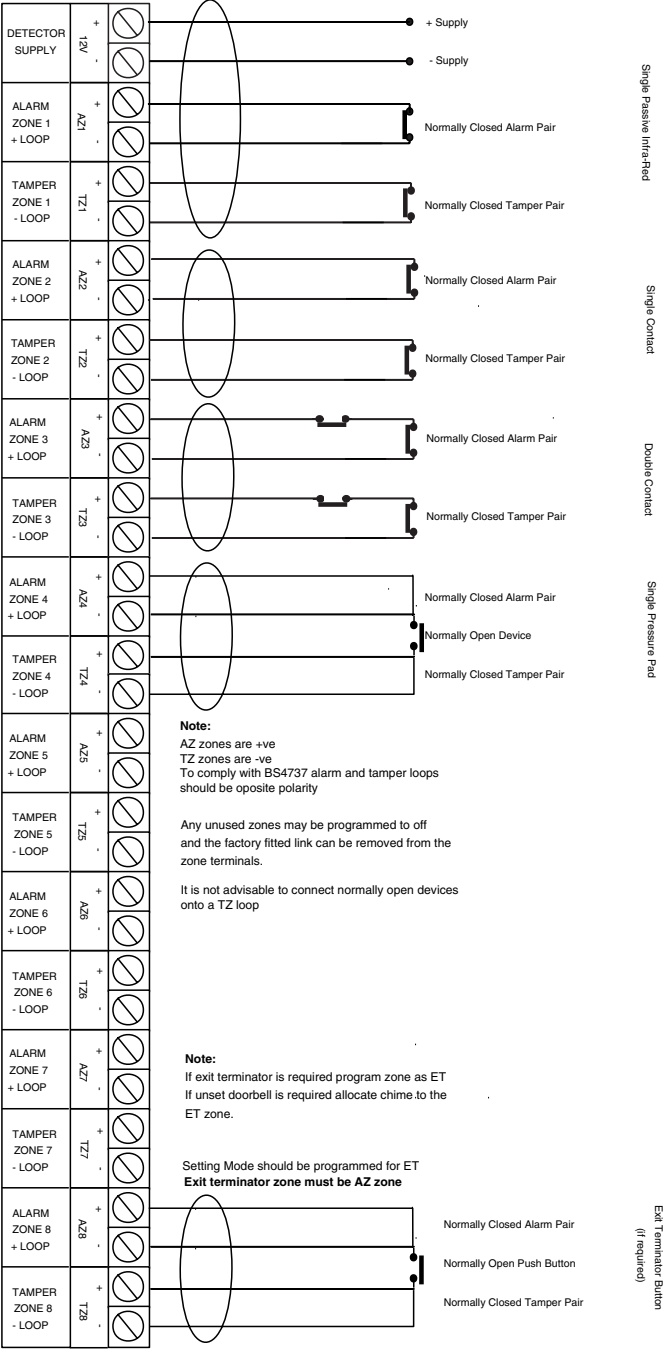
To use the 4 wire option the control panel should be programmed for 8 (4 WIRE) in the programming section 'PROGRAM ZONE WIRING' (option No.50). This is the default setting.

Each zone is fully programmable. Details of the zone options available are given in the section 'Programmable Options Description'. Each alarm zone is marked as AZx and is a positive loop, each tamper zone is marked as TZx and is a negative loop.

If pressure pads or other normally open devices, are to be used the AZ zone should be shorted to the TZ zone by the device in order to activate the AZ zone.

Typical wiring of various detectors is given in Fig. 23

Fig. 23 Typical 4 Wire Configuration



Zone Connections

(control panel 2 Wire option)

The second wiring method is Two Wire. This option will give sixteen zones available from the control panel PCB.

To use the 2 wire option the control panel should be programmed for 16 (2 WIRE) in the programming section 'PROGRAM ZONE WIRING' (option No.50)

When this wiring option is programmed zones AZ1 to AZ8 are zones 1 to 8 inclusive, all AZ zones are positive loops. Zone numbering for the AZ zone will be as follows:-

Zone 1 on terminals AZ1
Zone 2 on terminals AZ2
Zone 3 on terminals AZ3
Zone 4 on terminals AZ4
Zone 5 on terminals AZ5
Zone 6 on terminals AZ6
Zone 7 on terminals AZ7
Zone 8 on terminals AZ8

All AZ zones are positive loops

Because the 2 wire option has been selected the TZ terminals are also programmable as zones. The zone numbering for the TZ zones will be as follows:-

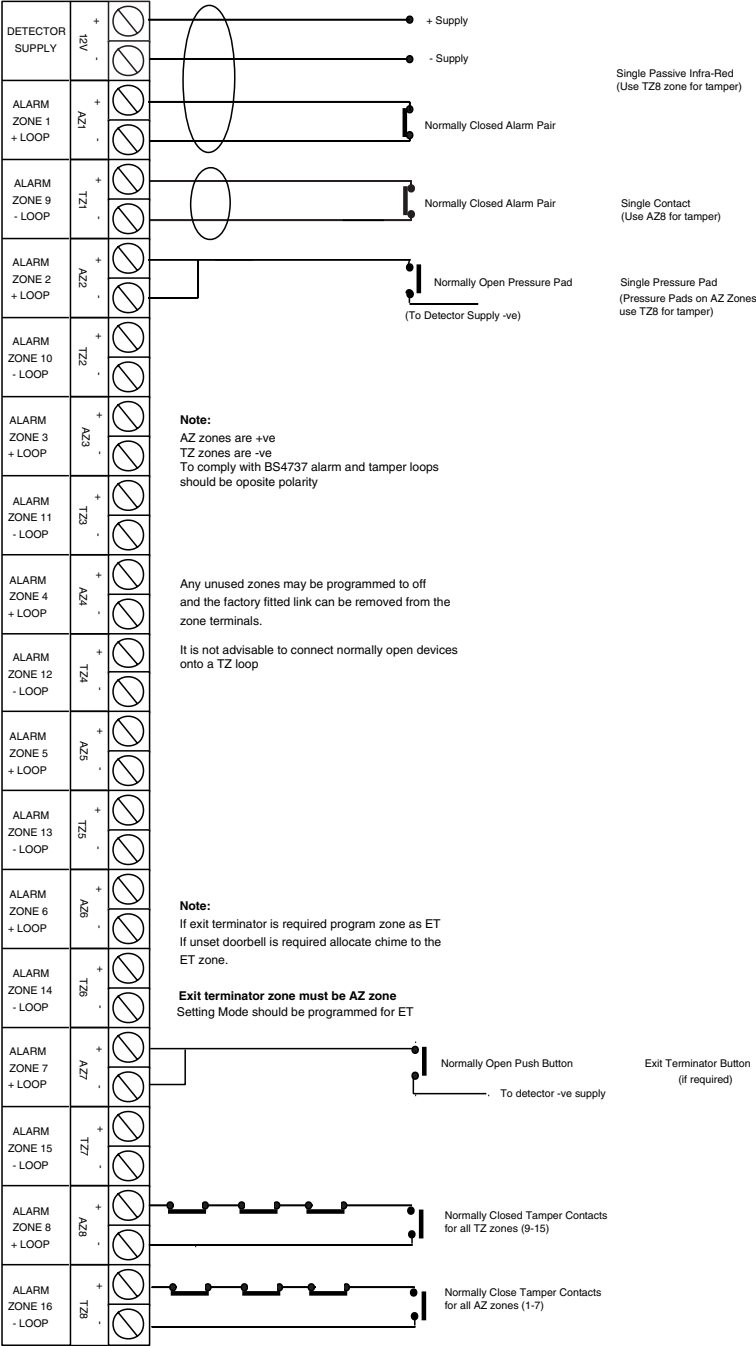
Zone 9 on terminals TZ1
Zone 10 on terminals TZ2
Zone 11 on terminals TZ3
Zone 12 on terminals TZ4
Zone 13 on terminals TZ5
Zone 14 on terminals TZ6
Zone 15 on terminals TZ7
Zone 16 on terminals TZ8

All TZ zones are negative loops

It should be noted that in order to comply with the requirements of BS 4737 zones and tampers should be of opposite polarity. This means that when using the 2 wire wiring option one AZ zone (e.g zone 8, AZ8) should be programmed as 24Hr and used as a global tamper for all TZ zones, and one TZ zone (e.g zone 16, TZ8) should be programmed as 24Hr and used as a global tamper for all the AZ zones.

Typical wiring of various detectors is given in Fig.24

Fig. 24 Typical 2 Wire Configuration



Zone Connections

(control panel 2 Wire EOL option)

The third wiring method is Two Wire EOL (End Of Line resistor). This option will give sixteen zones available from the control panel PCB.

To use the 2 wire EOL option the control panel should be programmed for 16 (2 WIRE EOL) in the programming section 'PROGRAM ZONE WIRING' (option No.50)

When this wiring option is programmed zones AZ1 to AZ8 are zones 1 to 8 inclusive. The zone numbering for the AZ zones will be as follows:-

Zone 1 on terminals AZ1
Zone 2 on terminals AZ2
Zone 3 on terminals AZ3
Zone 4 on terminals AZ4
Zone 5 on terminals AZ5
Zone 6 on terminals AZ6
Zone 7 on terminals AZ7
Zone 8 on terminals AZ8

Because the 2 wire EOL option has been selected the TZ terminals are also programmable as zones. The zone numbering for the TZ zones will be as follows:-

Zone 9 on terminals TZ1
Zone 10 on terminals TZ2
Zone 11 on terminals TZ3
Zone 12 on terminals TZ4
Zone 13 on terminals TZ5
Zone 14 on terminals TZ6
Zone 15 on terminals TZ7
Zone 16 on terminals TZ8

Up to 10 detectors may be used on each loop. A 6K8 resistor is connected across the alarm pair of each detector and a 4K7 resistor is connected in series with the loop at the furthest most point.

EOL wiring will give the best possible wiring security as it will not allow any bridging or cutting of the zone loop

Typical wiring of various detectors is given in Figs.25 to 29

Fig. 25 Typical 2 Wire EOL Configuration

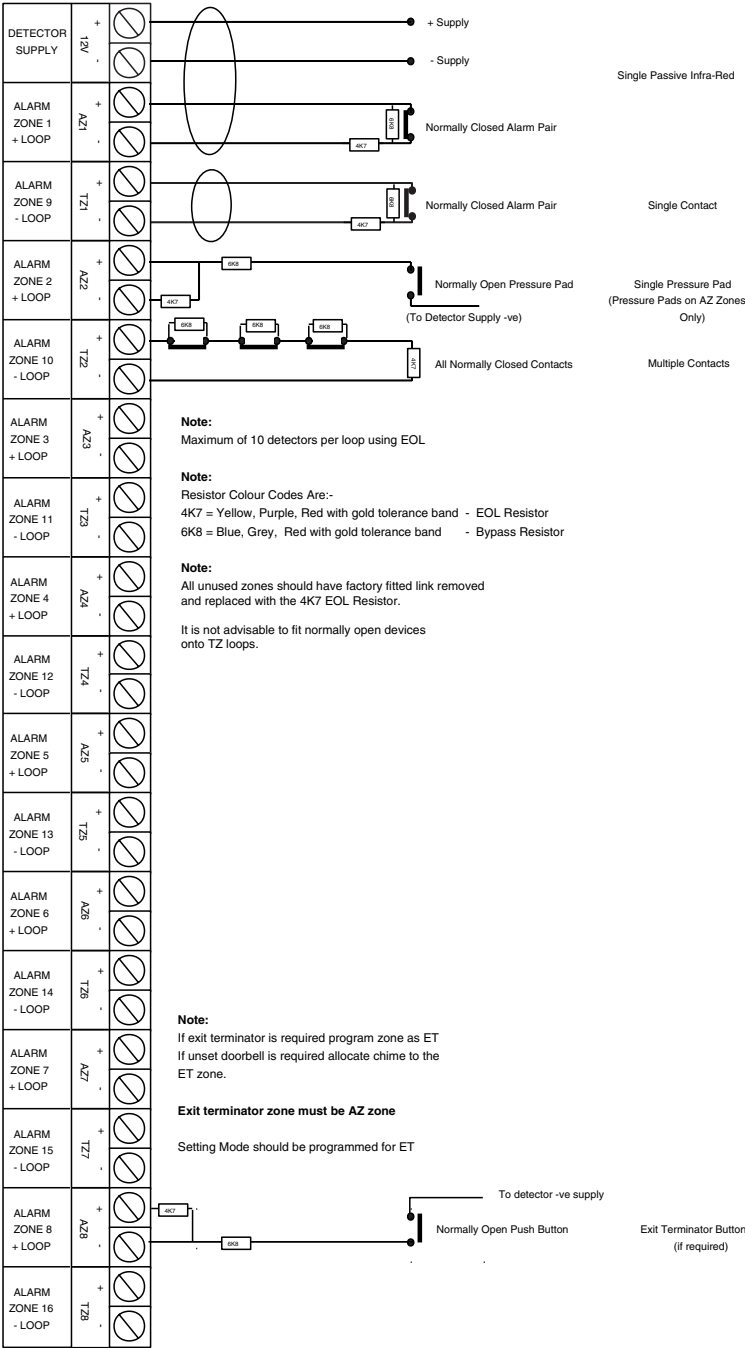


Fig. 26

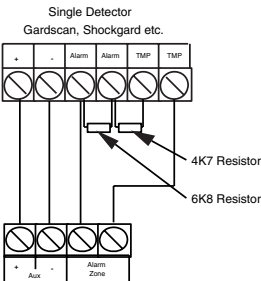


Fig. 27

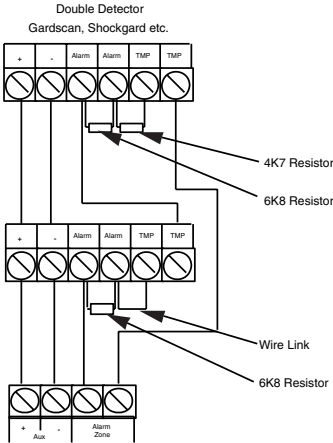


Fig. 28

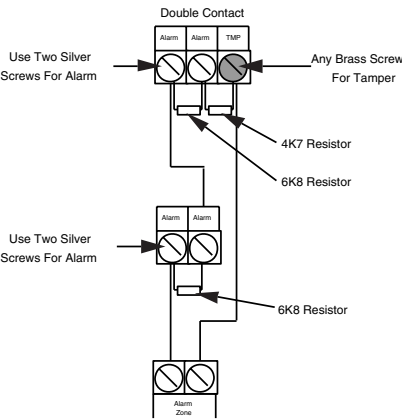
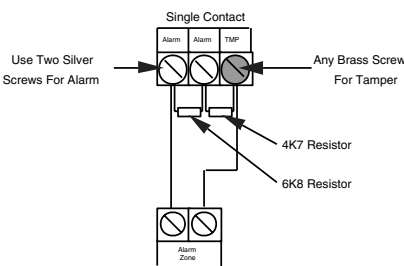


Fig. 29

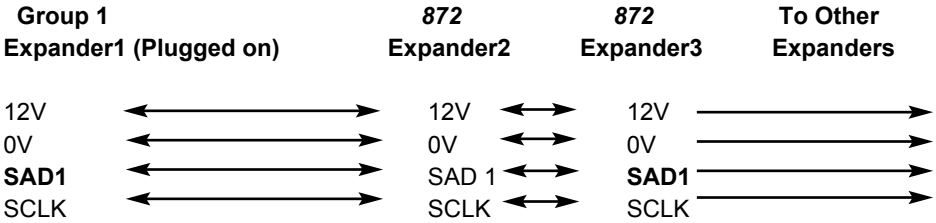


Zone Expander Cards

Up to sixteen zone expander cards may be fitted to the GardTec 872. If required one of these expander cards may be plugged directly onto the the main PCB, the other expander cards then being wired to the plug-on card as shown in Fig. 30. **Four cores are required for interconnection of the zone expanders. If Output Expanders are to be used on the same leg as zone expanders an extra core will be required.**

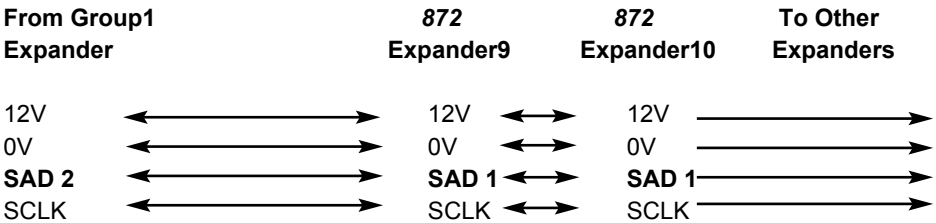
The expanders are wired in two groups EXP1 to EXP8 use SAD1 and EXP9 to EXP16 use SAD2

Fig. 30a GardTec 872 Expander Card Wiring 'Daisy Chain' Format for EXP1 to EXP8



If you intend to use Expanders 9 to 16 or any Output expanders also wire SAD2 terminals.

Fig. 30b GardTec 872 Expander Card Wiring 'Daisy Chain' Format for EXP9 to EXP16

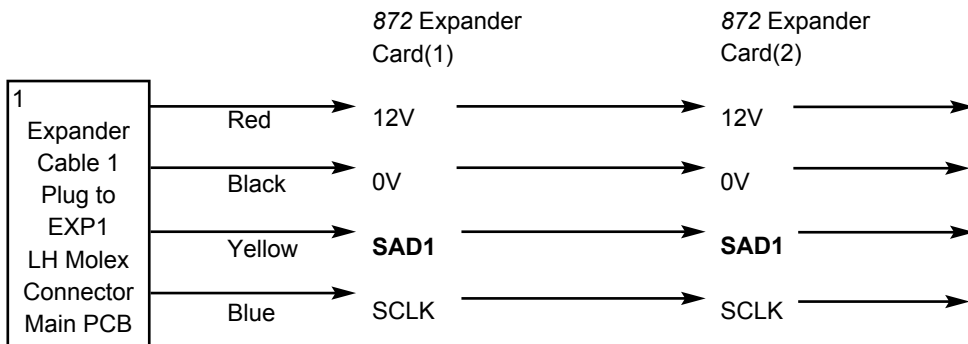


The expander cards may also be wired back to the onboard expander card in 'Star' format (each expander card wired back individually).

Alternatively all the zone expander cards may be wired to the main PCB via an optional zone expander cable Part No. 01-094.. When using the zone expander cable the following colours should be used (see Figs 31a, 31b).

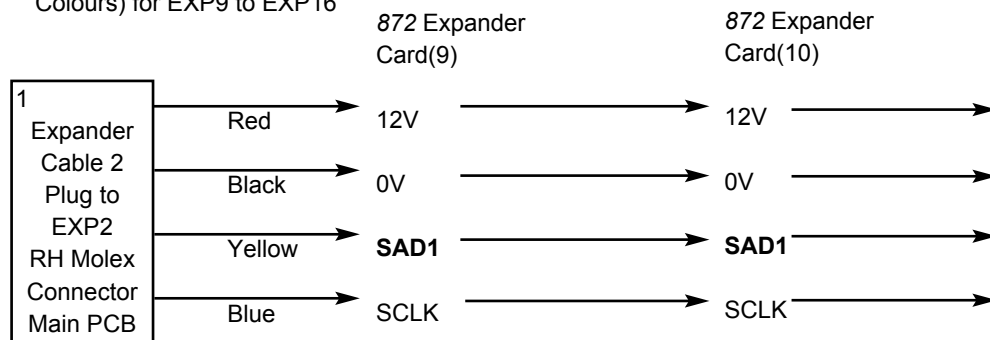
If Output expanders or **Group 2** Expanders are used **SAD2** terminals should be used on the first group. If the expanders are remote from the main PCB a second expander cable will be required to plug onto PCB **EXP2** socket. The **SAD2** connection on this second cable is the yellow core.

Fig. 31a GardTec 872 Zone Expanders (**Group1**) remote from panel (inc Cable Colours) for EXP1 to EXP8



Each of the Expander cards should be idented using the jumpers JP1-JP8 on the card.

Fig. 31b GardTec 872 Zone Expanders (**Group2**) remote from panel (inc Cable Colours) for EXP9 to EXP16



Each of the Expander cards should be idented using the jumpers JP1-JP8 on the card. JP1= EXP9, JP2=EXP10, JP3=EXP11, JP4=EXP12, JP5=EXP13, JP6=EXP14, JP7=EXP15, JP8=EXP16.

Note: In all above examples max cable run is 150 metres. It is recommended that PSUs are used to supply the detectors on remote expanders

Note:

Remote Expander Cable(s) Part No.01-094 will be required

The expander cable plug **MUST** be plugged in to the main PCB EXP socket(s) with the red wire to pin 1.

If required expander cards may be mounted in a remote expander box Part No 02-066 These expander boxes are ideal housings when the expander cards are to be mounted away from the control panel.

Zone Expander Card Ident & Zone Allocation

The panel and each individual card may be programmed as four wire, two wire or two wire EOL wiring modes. All zones on ZEX 1 start at 21 and all zones on ZEX 2 start at 31 and so on. The zone allocation for the different modes is given below.

Group 1 Expanders using SAD1 from panel to SAD1 terminal on Expander

EXP1 JP1 On 4 Wire 2 Wire 2 Wire EOL

AZ1 Zone	21	21	21
AZ2 Zone	22	22	22
AZ3 Zone	23	23	23
AZ4 Zone	24	24	24
TZ1 Zone	21 Tamper	25	25
TZ2 Zone	22 Tamper	26	26
TZ3 Zone	23 Tamper	27	27
TZ4 Zone	24 Tamper	28	28

EXP2 JP2 On 4 Wire 2 Wire 2 Wire EOL

AZ1 Zone	31	31	31
AZ2 Zone	32	32	32
AZ3 Zone	33	33	33
AZ4 Zone	34	34	34
TZ1 Zone	31 Tamper	35	35
TZ2 Zone	32 Tamper	36	36
TZ3 Zone	33 Tamper	37	37
TZ4 Zone	34 Tamper	38	38

EXP3 JP3 On 4 Wire 2 Wire 2 Wire EOL

AZ1 Zone	41	41	41
AZ2 Zone	42	42	42
AZ3 Zone	43	43	43
AZ4 Zone	44	44	44
TZ1 Zone	41 Tamper	45	45
TZ2 Zone	42 Tamper	46	46
TZ3 Zone	43 Tamper	47	47
TZ4 Zone	44 Tamper	48	48

EXP4 JP4 On 4 Wire 2 Wire 2 Wire EOL

AZ1 Zone	51	51	51
AZ2 Zone	52	52	52
AZ3 Zone	53	53	53
AZ4 Zone	54	54	54
TZ1 Zone	51 Tamper	55	55
TZ2 Zone	52 Tamper	56	56
TZ3 Zone	53 Tamper	57	57
TZ4 Zone	54 Tamper	58	58

EXP5 JP5 On	4 Wire	2 Wire	2 Wire EOL
AZ1 Zone	61	61	61
AZ2 Zone	62	62	62
AZ3 Zone	63	63	63
AZ4 Zone	64	64	64
TZ1 Zone	61 Tamper	65	65
TZ2 Zone	62 Tamper	66	66
TZ3 Zone	63 Tamper	67	67
TZ4 Zone	64 Tamper	68	68

EXP6 JP6 On	4 Wire	2 Wire	2 Wire EOL
AZ1 Zone	71	71	71
AZ2 Zone	72	72	72
AZ3 Zone	73	73	73
AZ4 Zone	74	74	74
TZ1 Zone	71 Tamper	75	75
TZ2 Zone	72 Tamper	76	76
TZ3 Zone	73 Tamper	77	77
TZ4 Zone	74 Tamper	78	78

EXP7 JP7 On	4 Wire	2 Wire	2 Wire EOL
AZ1 Zone	81	81	81
AZ2 Zone	82	82	82
AZ3 Zone	83	83	83
AZ4 Zone	84	84	84
TZ1 Zone	81 Tamper	85	85
TZ2 Zone	82 Tamper	86	86
TZ3 Zone	83 Tamper	87	87
TZ4 Zone	84 Tamper	88	88

EXP8 JP8 On	4 Wire	2 Wire	2 Wire EOL
AZ1 Zone	91	91	91
AZ2 Zone	92	92	92
AZ3 Zone	93	93	93
AZ4 Zone	94	94	94
TZ1 Zone	91 Tamper	95	95
TZ2 Zone	92 Tamper	96	96
TZ3 Zone	93 Tamper	97	97
TZ4 Zone	94 Tamper	98	98

Note: Expander 8 cannot be used if a Radio Expander is being used

Group 2 Expanders using SAD2 from panel to SAD1 terminal on Expander

EXP9 JP1 On	4 Wire	2 Wire	2 Wire EOL
AZ1 Zone	101	101	101
AZ2 Zone	102	102	102
AZ3 Zone	103	103	103
AZ4 Zone	104	104	104
TZ1 Zone	101 Tamper	105	105
TZ2 Zone	102 Tamper	106	106
TZ3 Zone	103 Tamper	107	107
TZ4 Zone	104 Tamper	108	108
EXP10 JP2 On	4 Wire	2 Wire	2 Wire EOL
AZ1 Zone	111	111	111
AZ2 Zone	112	112	112
AZ3 Zone	113	113	113
AZ4 Zone	114	114	114
TZ1 Zone	111 Tamper	115	115
TZ2 Zone	112 Tamper	116	116
TZ3 Zone	113 Tamper	117	117
TZ4 Zone	114 Tamper	118	118
EXP11 JP3 On	4 Wire	2 Wire	2 Wire EOL
AZ1 Zone	121	121	121
AZ2 Zone	122	122	122
AZ3 Zone	123	123	123
AZ4 Zone	124	124	124
TZ1 Zone	121 Tamper	125	125
TZ2 Zone	122 Tamper	126	126
TZ3 Zone	123 Tamper	127	127
TZ4 Zone	124 Tamper	128	128
EXP12 JP4 On	4 Wire	2 Wire	2 Wire EOL
AZ1 Zone	131	131	131
AZ2 Zone	132	132	132
AZ3 Zone	133	133	133
AZ4 Zone	134	134	134
TZ1 Zone	131 Tamper	135	135
TZ2 Zone	132 Tamper	136	136
TZ3 Zone	133 Tamper	137	137
TZ4 Zone	134 Tamper	138	138

EXP13 JP5 On	4 Wire	2 Wire	2 Wire EOL
AZ1 Zone	141	141	141
AZ2 Zone	142	142	142
AZ3 Zone	143	143	143
AZ4 Zone	144	144	144
TZ1 Zone	141 Tamper	145	145
TZ2 Zone	142 Tamper	146	146
TZ3 Zone	143 Tamper	147	147
TZ4 Zone	144 Tamper	148	148

EXP14 JP6 On	4 Wire	2 Wire	2 Wire EOL
AZ1 Zone	151	151	151
AZ2 Zone	152	152	152
AZ3 Zone	153	153	153
AZ4 Zone	154	154	154
TZ1 Zone	151 Tamper	155	155
TZ2 Zone	152 Tamper	156	156
TZ3 Zone	153 Tamper	157	157
TZ4 Zone	154 Tamper	158	158

EXP15 JP7 On	4 Wire	2 Wire	2 Wire EOL
AZ1 Zone	161	161	161
AZ2 Zone	162	162	162
AZ3 Zone	163	163	163
AZ4 Zone	164	164	164
TZ1 Zone	161 Tamper	165	165
TZ2 Zone	162 Tamper	166	166
TZ3 Zone	163 Tamper	167	167
TZ4 Zone	164 Tamper	168	168

EXP16 JP8 On	4 Wire	2 Wire	2 Wire EOL
AZ1 Zone	171	171	171
AZ2 Zone	172	172	172
AZ3 Zone	173	173	173
AZ4 Zone	174	174	174
TZ1 Zone	171 Tamper	175	175
TZ2 Zone	172 Tamper	176	176
TZ3 Zone	173 Tamper	177	177
TZ4 Zone	174 Tamper	178	178

Note: Expander 16 cannot be used if a Radio Expander is being used

Note: Wiring configurations may differ on each zone expander card to suit your requirements. For example the control panel may be programmed as 4 Wire, Expander 1 as 2 Wire and Expander 3 as 2 Wire EOL etc, etc.

On all Standard Zone Expanders AZ zones are +ve and TZ zones are -ve

ID Expanders

The GardTec ID Expander card allows thirty detectors to be fitted on a four wire run using industry standard ID biscuits or ID compatible devices. Two ID expander cards can be fitted to the control panel. The control panel zones may still be programmed as 'Normal (4 wire)', 'Two Wire' or 'Two Wire EOL'. When used to full capacity this allows the GardTec 872 to have up to 16 control panel zones plus 60 ID zones. Radio Expanders cannot be used if ID Expansion has been chosen.

Each ID expander may be wired back to the control panel with standard alarm four core cable.

Wiring Configurations

Several configurations may be used for wiring the ID expanders to the control panel, these are:-

One ID Expander onboard the control panel PCB.

The expander is simply plugged across the molex pins marked as EXP1 and EXP2

One ID Expander remote from the control panel PCB.

This will require a Remote Expander cable (Part No. 01-094). This cable is plugged on to EXP1 with the Red wire to pin 1 and is wired to the ID Expander.

One ID Expander onboard the control panel PCB and one ID Expander remote from the PCB.

The first module is plugged across the molex pins on the control panel PCB marked as EXP1 and EXP2. The second module is then wired to the first.

Fig 32 ID Biscuit Wiring Diagram **Full wiring details are supplied with the ID Expander Board** Zone No's 21 - 50 are on ID card 1 (SAD1) Zone No's 51 - 80 are on ID card 2 (SAD2)

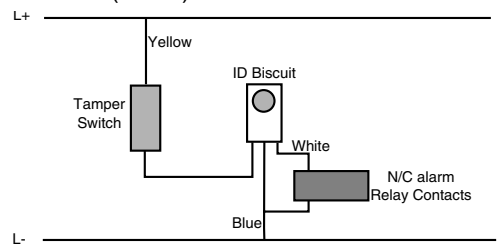


Fig33 Detector Using Wired ID Biscuit

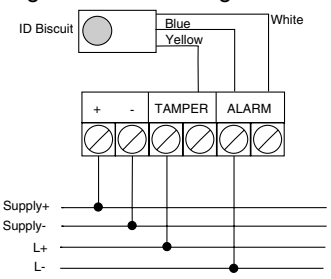
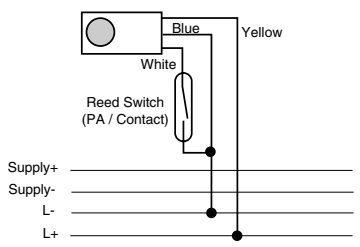


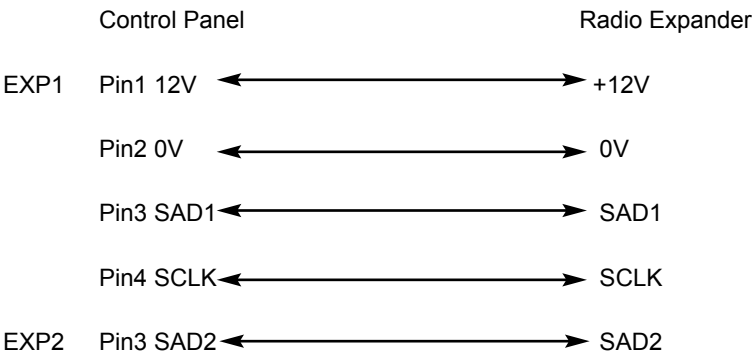
Fig34 Wired ID Biscuit for Contact/PA



Radio Expanders (Radio ZEX)

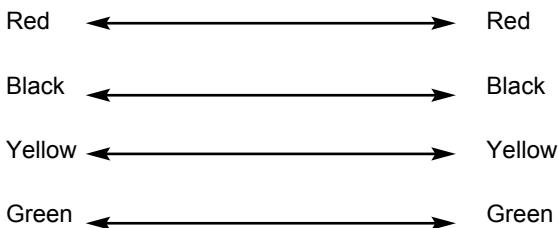
Radio Expanders cannot be used if the ID expansion option has been chosen. One Radio expansion card may be fitted that will allow up to two Radio Receivers (8 channels each) to be fitted. The first Radio Receiver must be identified as receiver number one. The second receiver is identified as receiver number 2. Each Radio Receiver is capable of using up to eight radio detectors.

Radio Expander Card to Control Panel.



Once the Radio Expander Card has been connected to the GardTec 872 control panel it should be connected to the Radio Receiver as follows:-

Radio Expander Card to Radio Receiver Wiring



Notes: Further instruction are supplied with Radio Expander Card

Zones occupied by receiver 1 are 91 to 98

Zones occupied by receiver 2 are 171 to 178

Output Expander Modules (OPX)

Up to four output expander modules may be fitted to the GardTec 872 control panel. These modules may, if required be wired in a chain of zone expanders or on a separate leg(s). **The zone expanders only require four cores for interconnection, if Output Expanders are used on the same leg five cores will be required (see page 38).**

Each Output Expander gives four change over relays. Contact rating 1A 12V (resistive).

Each Output Expander (OPX) has a bank of four jumper switches labelled OPX1 to OPX4. The output allocation is as follows:-

Jumper Position	Output No (LCD)	Output No (LED)
OPX1	OP1	1
OPX1	OP2	2
OPX1	OP3	3
OPX1	OP4	4
OPX2	OP1	5
OPX2	OP2	6
OPX2	OP3	7
OPX2	OP4	8
OPX3	OP1	9
OPX3	OP2	10
OPX3	OP3	11
OPX3	OP4	12
OPX4	OP1	13
OPX4	OP2	14
OPX4	OP3	15
OPX4	OP4	16

Notes: If required, two expander cards may be configured on the same ident to enable duplication of outputs.

When using any devices that consume current, consideration MUST be given to the overall current available from the control panel.

The invert link on the card will invert all the outputs of the card.

Engineers RKP Connection

To aid installation and programming an Engineers LCD RKP lead is available (part No. 01-090) that may be connected to an LCD RKP and plugged directly onto the main PCB of the control panel. This engineers RKP may be configured as RKP 1 to 4. It should be noted that if LED keypads have been fitted to the system for end user operation an LCD keypad may not share the same ident as an LED keypad.

This engineers RKP should be connected to the plug on the main PCB marked SK2 ENG RKP. The connector is 'keyed' and will only fit in one orientation, the use of force should be avoided to prevent damage to the plug or socket.

The GardTec 872 Control Panel must be programmed via an LCD Keypad.

The keypad wiring colours for the Engineers RKP lead are as follows.

Cable Colour		RKP Terminals
Red	←————→	12V
Yellow	←————→	Data A
Black	←————→	Data B
Blue	←————→	CLK
Green	←————→	0V
White	←————→	SPKR

Printer Connection

The GardTec 872 has an RS232 port that may be connected to a standard serial printer, to facilitate this two printer leads are available from GardTec Ltd.

Printer Cable No. 1	Part No 01-091	Connects from PCB direct to printer
Printer Cable No. 2A	Part No 01-092	Connects from PCB to chassis mounting DIN socket (to be mounted on panel case).
Printer Cable No. 2B	Part No 01-093	DIN plug to printer

The printer should be capable of being set to the following:-

Baud Rate	1200
Data Bits	8
Parity	None
Stop Bits	4
Carriage Return	None

Note: The printer should have its own power supply. Under no circumstances should the power for the printer be drawn from the control panel.

The printer may be used in one of three modes:-

- 1) For printing the Event Log (user or engineer function). Pressing 1 whilst viewing the Event Log will start the printer (refer to user manual for more details).
- 2) For printing the Program Review (engineer function). Pressing 1 whilst in the engineer option Program Review will start the printer.
- 3) For Real Time Printing. When Real Time Printing is programmed to ON each event that is written to the log will also be sent to the printer.

This option needs to be set ON from within the engineer programming mode (option 96) and may be overridden by the user by using the online / offline function on the printer.

Two suggested Printers are currently available, one from RS Components and one from Farnell Electronics. *Descriptions and Part Number correct at time of going to press.*

RS Components		Farnell Electronics	
Description	Part No.	Description	Part No.
24 col/2.5 lps printer	244-632	Serial Printer 2.5 lps	255-701
Power Adaptor	244-654	Battery Charger UK	231-540
2 Rolls + 1 Ribbon	202-981	Paper Roll 15m	177-306
		Paper Roll 30m	231-952
		Ribbon	308-213

5 AREAS, ZONES & OUTPUT TYPES

Understanding Areas

This section is intended to simplify the complicated subject of Areas and Area Codes. It is recommended that you read this section and understand it in its entirety before moving on to the programming section.

Typical zone programming to allow for the areas shown in Fig. 35 would be:-

Zone No.	Zone Type	Cover For	Area Allocation
1	Entry/Exit	Sales Office Door	Area 1
2	Access	Sales Office PIR	Area 1
3	Entry/Exit	Distribution Door	Area 2
4	Access	Distribution PIR	Area 2
5	Entry/Exit	Stores Door	Area 3
6	Access	Stores PIR	Area 3
7	Entry/Exit	Reception Door	Areas 1, 3
8	Access	Reception PIR	Areas 1, 3
9	Access	Corridor PIR	Areas 1, 3

Because zones 7, 8 & 9 are allocated to more than one area they will **automatically be classed as a common area by the system**. The zones within the common area will only be set when all areas on the system that contain these common area zones are set.

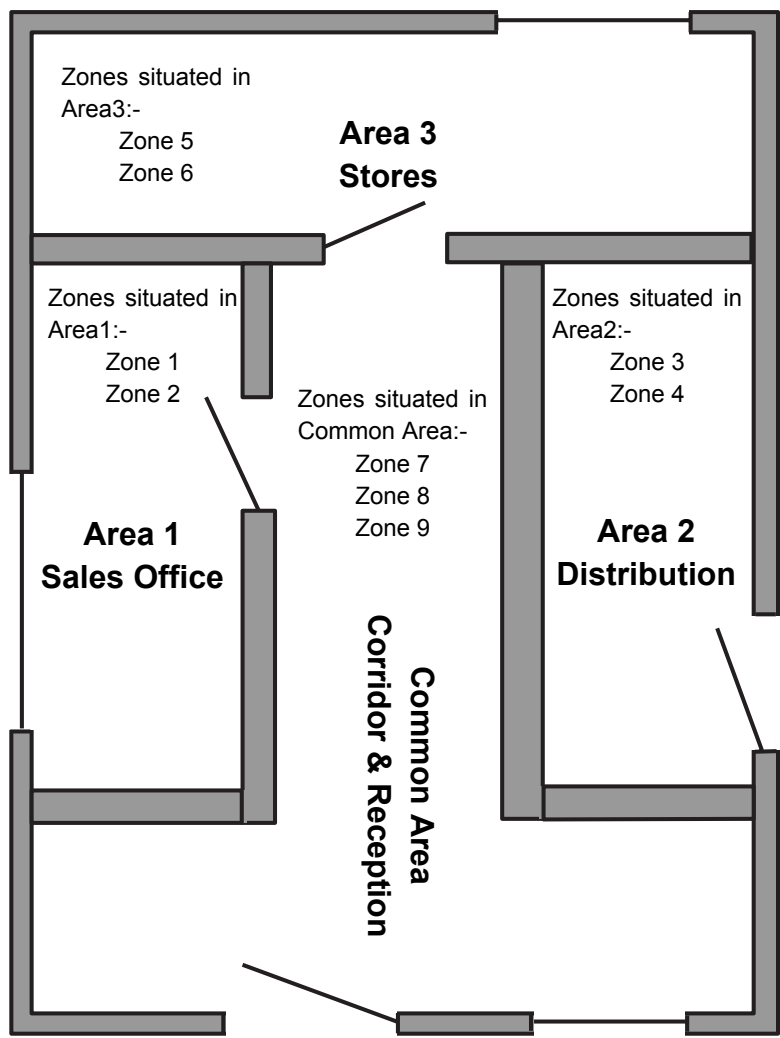
As can be seen in Fig. 32 Area 2 (Distribution) does not use the common area and therefore does not need to have the common area zones allocated to it. Setting and unsetting Area 2 will have no effect on the common area.

In the example shown each area would have its own RKP with the possibility of a fourth in the reception as a master RKP.

Consideration should be given to the zone types that are going to be used bearing in mind that the common area may already have been unset by an area user code, therefore entry points to other areas would also need to be programmed as entry/exit.

Three Areas are shown in this example, the GardTec 872 has 7 areas available

Fig. 35 Typical Area Layout



The User codes that are allocated to the system shown in Fig. 35 are:-

User No.	User Type	Functions Available
1	Master	Set/Area Sets/Part Set/Unset Remove Zones Test Zones View Log Change Chime Change User Codes Change Time/Date
2	Area 1	Set/Part Set/Unset Area 1
3	Area 2	Set/Part Set/Unset Area 2
4	Area 3	Set/Part Set/Unset Area 3

Note: User codes are programmed via a master level code (factory default 5678).

Note: Part Sets will only be available if they have been programmed by the engineer.

Note: Reset will be available on the code level programmed by the engineer.

In the event that an area does not have a code allocated to it (e.g area 1 code has been deleted) any other area code setting the system will also set the area without a code. This is to ensure that no areas can be left unset unintentionally.

Care should be taken by the engineer when allocating part sets so they do not overlap into other areas.

The cleaner area acts in a different way to other areas. The cleaner area is set up within the Zone Attributes programming sequence. Cleaner zones will then be removed from the system when a Part/Area 0 is used. The different ways that a cleaner code operates are:-

With system unset	Cleaner code will fully set the system.
With full system set	Cleaner code will unset only the cleaner zones.
With system part set 0	Cleaner code will set the remainder of the system.
With any one or more areas set	Cleaner code will set the cleaner zones.

Zone Type Terminology (Zone Types)

Each zone has a default type that may be re-programmed. Below is an explanation of the terminology used for zone types.

12 Hour

Zone active when Control Panel is Set.

Access

Will allow to pass through on exit.

Will allow to pass through on entry only if E/E is opened first.

24 Hour

Internal Sounder if Unset.

Full alarm if Set.

Remains active in Engineer Programming Mode.

Entry/Exit (or E/E)

Zone used as last exit point (will terminate exit time if setting mode is set to E/E or Time+E/E).

Will start E/E time if opened when Control Panel is Set

Part E/E

As Access if Control Panel is Full Set

As Entry/Exit if Control Panel is Part Set

Panic

24Hour Personal Attack (or Panic Attack). Active if Control Panel is Set, Unset or in Engineer Programming Mode . May only be tested via Engineer code if programmed as testable.

Alert

Internal Sounder Only, Recorded to Log when Unset

Recorded to Log when SET

Fire

Will give Fire alarm when activated (pulsed sounders) with Control Panel Set or Unset.

Remains active in Engineer Programming Mode.

ET

Exit terminator. Used for final setting of the system. Exit Mode must be programmed for ET or Time + ET.

Monitor

Will write to the log once only in any one set or unset unless chime is allocated then all activations are written to the log.

KSW Bat

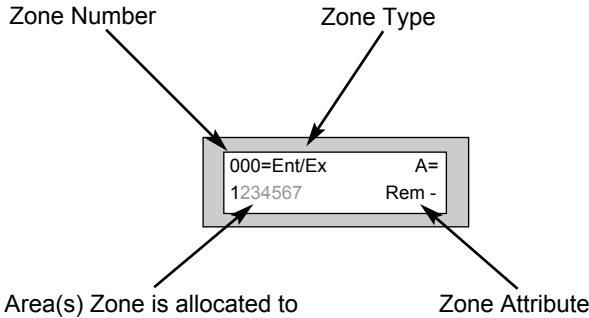
When used zone should be connected to the trouble/status output of third party radio equipment that is capable of giving a low battery signal.

Line Fault

When used acts as a Line Fault input to the control panel.

Zone Type Terminology (Areas & Attributes)

When programming the zone types other zone attributes including area allocation may be programmed within the same screen. Please refer to the breakdown of the Zone programming screen below.



Zone Programming Screen

Zone Number

The Zone number currently being programmed.

Zone Type

The current Zone Type (refer to previous page for terminology).

Area(s)

Area(s) that the current zone is allocated to.

Zone Attribute

Attribute for current zone. Attributes available are:-

Remove-

Zone cannot removed (omitted) by the end user.

Rem+/Dk

Zone may be removed (omitted) by end user and is also Double Knock.

Rem -/Dk

Zone cannot be removed (omitted) by end user and is also Double Knock.

Off

Zone is turned Off.

Norm.Ky

Zone is a Normal Type Keyswitch Zone.

Bias.Ky

Zone is a Bias Type Keyswitch Zone.

Remove +

Zone may be removed (omitted) by end user.

Note: Each Zone should be programmed individually for your requirements.

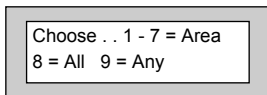
Output Types Terminology

There are two groups of outputs types available.

General Outputs. These are available on the following terminals

- Detector Reset Terminal
- Latch Terminal
- On-Board Relay Terminals (com, N/O, N/C)
- PGM 3 Terminal (Strobe Terminal)
- Optional Output Cards (max 4 cards each having 4 changeover relays)

When programming these outputs and you press no to the current setting the display will show:-



At this point choose if you require the output to be allocated to Area 1 - 7 or All Areas or Any Area

Some General Output Types may be used for triggering Digital Communicators or RedCare STUs.

Below is given a list of Output Types with a brief description of the option.

Off

Output not used

Pulse Off

Output is active and will switch for 3 seconds when code is entered

Pulse On

Output is inactive and will switch for 3 seconds when code is entered

After Alarm

Will trigger in alarm and stay in alarm until panel has auto rearmed or has been reset

Walk test

Will activate when the panel is in test mode

Pulse Set

Will activate for 5 seconds when the panel sets

Int Sounder

Will activate when panel is in alarm or tamper

E/E

Will activate for the duration of the entry exit times

Bell

Will activate when the bell is triggered and will cut off with the bell time

Alert

Will activate when an alert zone is triggered

Any Fire

Will activate when a fire zone is triggered

Any Panic

Will activate when a panic zone is triggered will also activate when a duress code is entered

Alarm

Will activate when panel is in alarm and will reset when a code is entered

Alarm B

Will activate when a second zone has alarmed (The activation of this output is dependent upon other system attributes) Please refer to DD243 Section .

Alm Abort

Will activate when the panel is in alarm and unset within the programmed abort time

O/C Cleaner

Used for sending open and closing when a cleaner code is used

Cleaner Set

Will active when a cleaner code is used to set the system

Gen Tamper

Will activate with bell / control / keypad / zex tampers

Zone 24Hr

Will activate when a 24Hr zone is triggered

Part Set

Will activate when the system is part set or when a zone is removed (omitted)

Strobe

Will activate when the strobe is triggered

Latch Any

Will activate when panel is set and will reset when entry timer starts

Any Set

Will activate when panel is set and will reset when panel is unset

Power Fail

Will activate when aux. power falls below 10.6 volts

Power OK

Output is active and changes over when the battery volts fall below 10.6 V

Watchdog

Will activate when the processor is reset

Mails Fail

Will Activate when the mains is removed from the panel and will reset when the mains is restored

Any Digi

Will activate when any Digicom channel is triggered

Status

This output has 3 operating modes intended to provide visual indication of system status

Set output on for 10 seconds

Unset On for 1 second Off for 1 second for a 10 second period

Confirmed On for 3 seconds Off for 1 second until the system is reset.

Perimeter

Will activate when a perimeter zone is triggered

Zone Exclude

Will activate when the panel auto rearms with a zone in fault condition

Custom 1-8

This output can be used to follow a zone or code

Timed 1-3

This output will follow the programmed On /Off times for times 1/2/3

Any Closed

This output will change over when any area is set

Communications Outputs. These are available on the following terminals

D1

D2

D3 (PA terminal)

D4 (12Hr terminal)

Digicom Channels (when used with GardTec ProDigi or Digi / Modem)

Below is given a list of Output Types with a brief description of the option.

Off

Output not used

Zone 24Hr

Will activate when a 24Hr zone is triggered

Gen Tamper

Will activate with bell / control / keypad / zex tampers

Alert

Will activate when an alert zone is triggered

Fire

Will activate when a fire zone is triggered

Part Set

Will activate when the system is part set or when a zone is removed (omitted)

Open / Close

Will activate when panel set or unset

Panic

Will activate when a panic zone is triggered will also activate when a duress code is entered

Alarm

Will activate when panel is in alarm and will reset when the panel auto rearms or when the panel is reset

Alarm B

Will activate when a second zone has alarmed (The activation of this output is dependent upon other system attributes) Please refer to the DD243 Section within this manual.

Alarm Abort

Will activate when the panel is in alarm and unset within the programmed abort time .

Power Fail

Will activate when aux. power falls below 10.6 volts.

Watchdog

Will activate when the processor is reset.

Mails Fail

Will Activate when the mains is removed from the panel and will reset when the mains is restored.

Area 1-7 Alarm

Will activate when the selected area is in alarm and will reset when the panel auto re-arms or when the panel is reset.

O/C Area 1-7

Will activate when the selected area is set and unset.

O/C Cleaner

Used for sending open and closing when a cleaner code is used.

Area 1-7 Alarm B

Will activate when a second zone has alarmed in the selected area (The activation of this output is dependent upon other system attributes) Please refer to the DD243 Section within this manual.

Alarm Abort 1-7

Will activate when the selected area is in alarm and unset within the programmed abort time.

Area 1-7 Panic

Will activate when the selected area panic zone is triggered will also activate when a area duress code is entered.

Area 1-7 Fire

Will activate when a selected area fire zone is triggered.

Perimeter

Will activate when a perimeter zone is triggered.

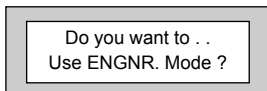
Zone Exclude

Will activate when the panel auto rearms with a zone in fault condition. It is a requirement of DD243 that a zone that is auto excluded is reported to central station.

6 PROGRAMMING

GardTec 872 Programming

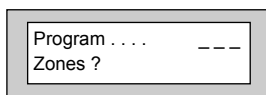
To program the GardTec 872 the engineer must first enter the programming routine by entering the engineer code (factory default 1234), The LCD display will then show:-



Do you want to . .
Use ENGR. Mode ?

Press YES to enter into the programming routine.

LCD display will then show:-



Program ---
Zones ?

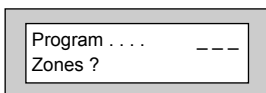
When using the LCD keypad two methods may be used to access the various programmable options.

Method 1

At any point during programming where three underscores are shown in the top right hand corner of the screen, you may enter the number of the option (given in the following section) you wish to program followed by YES. The program will then move direct to that option.

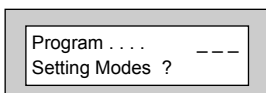
Method 2

The programming routine is structured with a series of headers for example:-



Program ---
Zones ?

This is the header of the Zone programming routine, all zone programming options are accessed through this header. If you do not wish to program anything under the zone header pressing NO will move to the next header. For example pressing NO on the display above will move to the next header shown below:-



Program ---
Setting Modes ?

Details of the available headers and the options available under each header can be found in the section GardTec 872 Program Orders.

Menu Shortcut Numbers

Due to the vast range of features available on the GardTec 872 control panel an LCD keypad must be used for programming.

For DD243:2002 options please refer to page 85.

Menu No.	Jumps to
1	Relay Mode / PGM3 Mode
2	Timers On Time
3	Timers On Time
4	Timers Off Time
5	Timers Off Time
6	PA Mode
7	PA Mode
8	Chime Level
9	Entry Exit Level
10	Exit Sounder Mode
11	Final Set Delay
12	Full Set Setting Time / Setting Mode
13	Part 1 Set Setting Time / Setting Mode
14	Part 2 Set Setting Time / Setting Mode
15	Part 3 Set Setting Time / Setting Mode
16	Full Set Setting Time / Setting Mode
17	Part 1 Set Setting Time / Setting Mode
18	Part 2 Set Setting Time / Setting Mode
19	Part 3 Set Setting Mode / Setting Time
20	Alert 1 Keys Mode / On Off
21	Alert 2 Keys Mode / On Off
22	No. of Keypads / Multi On Off / Keyswitch
23	Bell Delay / No. of Bell Arms
24	Bell Ring Time / Sounder Mode
25	Bell Delay / No. of Arms
26	NovActive On Off
27	Bell Tamper Ring On Off
28	Entry Time 1
29	Entry Time 2 (use 00 for DD243:2002 system)
30	Digi Delay / Part Alarm Digi
31	D1 Mode / D2 Mode
32	D1 Mode / D2 Mode
33	Channel Start Polarity
34	Digicom Type
35	Key Beep Level

Menu No.	Jumps to
36	No. of Keypads / Multi On Off / Keyswitch
37	Zone Re-Arm / Double Knock Time
38	Engineer Code
39	Remote Reset / Line Fault Source
40	Line Fault Sounders
41	Line Fault Mode
42	Line Fault Log
43	Duress On Off
44	Latch Terminal Mode
45	Bell Ring Time / Sounder Mode
46	Alarm Reset Mode
47	Tamper Reset Mode
48	Backlight Mode
49	Zone Re-Arm / Double Knock Time
50	On-Board Zone Wiring Modes
51	On-Board Zone Wiring Modes (enter zone No.)
52	Test Zone (entering zones to be on test)
53	Service Timer On Off
54	Service Due Weeks
55	Zone Log Limit
56	Alert 1 Keys Mode / Alert 1 Keys On Off
57	Alert 2 Keys Mode / Alert 2 Keys On Off
58	Digicom Channels
59	Digicom Channels
60	Digicom Channels
61	Digicom Channels
62	Digicom Channels
63	Digicom Channels
64	Alarm Restore / Abort Time
65	Digicom Type or Test
66	E/E Zones in Part Set
67	Engineer Code Locked / Unlocked
68	Strobe Confirm
69	Auto Part Set
70	Part Set Bells
71	Zone Types (enter zone No.)
72	Zone Expansion Type
73	ID mapping (set expansion type ZEX / ID first)
74	ID mapping (set expansion type ZEX / ID first)
75	N/A
76	N/A
77	N/A

Menu No.	Jumps to
78	N/A
79	N/A
80	N/A
81	N/A
82	N/A
83	Expander 1 O/P1 Mode
84	Timer 2 On Time
85	Timer 2 On Time
86	Timer 2 Off Time
87	Timer 2 Off Time
88	Timer 3 On Time
89	Timer 3 On Time
90	Timer 3 On Time
91	Timer 3 Off Time
92	Timer 3 Off Time
93	Custom Display
94	Custom Text
95	Zone Descriptors (enter Zone No.)
96	List Event Log
97	List Event Log
98	Event Log (while viewing 1 = Printer On / Off)
99	Program review (while viewing 1 = Printer On / Off)
100	N/A
101	Alarm 2 Reset Mode
102	Alarm 3 Reset Mode
103	D1 / D2 Mode
104	D1 / D2 Mode
105	D1 / D2 Mode
106	D1 / D2 Mode
107	Bell 2 Ring Time / Bell 3 Ring Time
108	Bell 2 Ring Time / Bell Ring 3 Time
109	Bell Delay Time
110	Bell Delay 3 Time
111	Full Set Exit Time / Exit Mode Area 2
112	Part 1 Set Exit Time / Exit Mode Area 2
113	Part 2 Set Exit Time / Exit Mode Area 2
114	Part 3 Set Exit Time / Exit Mode Area 2
115	Full Set Exit Time / Exit Mode Area 3
116	Part 1 Set Exit Time / Exit Mode Area 3
117	Part 2 Set Exit Time / Exit Mode Area 3
118	Part 3 Set Exit Time / Exit Mode Area 3
119	Full Set Exit Time / Exit Mode Area 2

Menu No.	Jumps to
120	Part 1 Exit Time / Exit Mode Area 2
121	Part 2 Exit Time / Exit Mode Area 2
122	Part 3 Exit Time / Exit Mode Area 2
123	Full Set Exit Time / Exit Mode Area 3
124	Part 1 Set Exit Time / Exit Mode Area 3
125	Part 2 Set Exit Time / Exit Mode Area 3
126	Part 3 Set Exit Time / Exit Mode Area 3
127	Remote Reset Mode / Line Fault Source
128	N/A
129	Forced Walk Test On Off / Forced Walk Test Bypass Time
130	Forced Walk Test On Off / Forced Walk Test Bypass Time
131	NovActive On Off
132	NovActive On Off
133	NovActive On Off
134	NovActive On Off
135	NovActive On Off
136	NovActive On Off
137	NovActive On Off
138	NovActive On Off
139	PSU Test Time
140	Duress On Off
141	Service Timer On Off
142	Relay Mode / PGM 3 (strobe terminal) Mode
143	N/A
144	N/A
145	N/A
146	N/A
147	N/A
148	N/A
149	N/A
150	N/A
151	N/A
152	N/A
153	Test Zones
154	Test Zones
155	Confirm Time Window (Start of DD243:2002 Section)
156	Secondary Time Window
157	Confirm on Entry On Off
158	Sounder Trigger
159	Unconfirm Reset
160	E/T Mode
161	Bell Trigger

Menu No.	Jumps to
162	Confirm Start Delay
163	ACE Battery Monitor On Off
164	Strobe Timer
165	Strobe Trigger
166	Custom 1 OP Mode (zone / code) / No. / Period / Mode
167	Custom 2 OP Mode (zone / code) / No. / Period / Mode
168	Custom 3 OP Mode (zone / code) / No. / Period / Mode
169	Custom 4 OP Mode (zone / code) / No. / Period / Mode
170	Custom 5 OP Mode (zone / code) / No. / Period / Mode
171	Custom 6 OP Mode (zone / code) / No. / Period / Mode
172	Custom 7 OP Mode (zone / code) / No. / Period / Mode
173	Custom 8 OP Mode (zone / code) / No. / Period / Mode
174	Comms Restore On Off
175	Full Set Exit Time / Exit Mode Area 4
176	Part 1 Set Exit Time / Exit Mode Area 4
177	Part 2 Set Exit Time / Exit Mode Area 4
178	Part 3 Set Exit Time / Exit Mode Area 4
179	Full Set Exit Time / Exit Mode Area 4
180	Part 1 Set Exit Time / Exit Mode Area 4
181	Part 2 Set Exit Time / Exit Mode Area 4
182	Part 3 Set Exit Time / Exit Mode Area 4
183	Bell Ring Time Area 4 / Bell Ring Time Area 5
184	Bell Delay Time Area 4
185	Full Set Exit Time / Exit Mode Area 5
186	Part 1 Set Exit Time / Exit Mode Area 5
187	Part 2 Set Exit Time / Exit Mode Area 5
188	Part 3 Set Exit Time / Exit Mode Area 5
189	Full Set Exit Time / Exit Mode Area 5
190	Part 1 Set Exit Time / Exit Mode Area 5
191	Part 2 Set Exit Time / Exit Mode Area 5
192	Part 3 Set Exit Time / Exit Mode Area 5
193	Bell Ring Time Area 4 / Bell Ring Time Area 5
194	Bell Delay Time Area 5
195	Full Set Exit Time / Exit Mode Area 6
196	Part 1 Set Exit Time / Exit Mode Area 6
197	Part 2 Set Exit Time / Exit Mode Area 6
198	Part 3 Set Exit Time / Exit Mode Area 6
199	Full Set Exit Time / Exit Mode Area 6
200	Part 1 Set Exit Time / Exit Mode Area 6
201	Part 2 Set Exit Time / Exit Mode Area 6
202	Part 3 Set Exit Time / Exit Mode Area 6
203	Bell Ring Time Area 6 / Bell Ring Time Area 7

Menu No.	Jumps to
204	Bell Delay Time Area 7
205	Full Set Exit Time / Exit Mode Area 7
206	Part 1 Set Exit Time / Exit Mode Area 7
207	Part 2 Set Exit Time / Exit Mode Area 7
208	Part 3 Set Exit Time / Exit Mode Area 7
209	Full Set Exit Time / Exit Mode Area 7
210	Part 1 Set Exit Time / Exit Mode Area 7
211	Part 2 Set Exit Time / Exit Mode Area 7
212	Part 3 Set Exit Time / Exit Mode Area 7
213	Bell Ring Tim Area 6 / Bell Ring Time Area 7
214	Bell Delay Area 7
215	ZEX9 Wiring Mode
216	ZEX10 Wiring Mode
217	ZEX11 Wiring Mode
218	ZEX12 Wiring Mode
219	ZEX13 Wiring Mode
220	ZEX14 Wiring Mode
221	ZEX15 Wiring Mode
222	ZEX16 Wiring Mode

Note: Not all options are available from the Menu numbers, some scrolling may be required to access other options.

Zone Descriptor Programming Template

When programming Zone Descriptors (or User Names) please use the template below for the allocation of keys to characters

1 = ABC

2 = DEF

3 = GHI

4 = JKL

5 = MNO

6 = PQR

7 = STU

8 = VWX

9 = YZ Space

No Delete

0 = 1234567890 Yes Space

Understanding Part/Test/Chime in Zone Attributes Section

Part Sets

Three Part Set modes are available on all models. These are Part1, Part 2 & Part3.

Part Set 1 may consist of a suite of zones that have been programmed as Part1 by the engineer.

Part Set 2 may consist of a suite of zones that have been programmed as Part2 by the engineer.

Part Set 3 combines all zones in Part1 & Part2 to form the third Part Set. This requires no additional programming by the engineer other than Part1 & Part2 programming.

Note: Zones programmed into a Part Set will be removed (omitted) from the system when that Part Set is used.

Test

Zones programmed as Test will not activate the system when it is set. Activations of test zones when the system is set will record to the log and will show 'Test Fail' when the system is unset.

Test should only be used for zones that will not be activated when the system is set. Do not use test on any E/E or Entry Route zones.

Note: After a zone has been put on test it will be automatically taken off test after 20 successful Set / Unset operations.

Chime

Any number of zones may be programmed as chime by the engineer. Chime is usually used as a low level warning when the system is unset that someone has entered a protected area.

Chime may be turned On and Off by the end user as required

If Exit Terminators are fitted to the system the Exit Terminator zone may be programmed for chime thus doubling as a door bell.

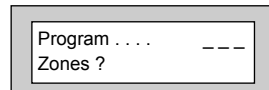
Walk (Forced Walk Test)

When FWT is used the zones programmed as Walk must be walk tested before the system will start to set. FWT Mode (option 130) must be programmed to 'All Sets' or 'Full Set Only' for FWT to operate. A FWT Bypass time is available via option 129. This allows up to 90 minutes between the system being unset and then set without having to walk test the system again.

Program Orders

As previously mentioned an alternative to entering option numbers with an LCD keypad is to scroll through the programmable options using the YES and NO keys.

To do this enter the engineer code followed by YES, the display will show:-



Pressing the NO key will move to the next header;

Pressing the YES key whilst viewing a header will enter into the options under that header;

Pressing 0 will escape back one step (except when a numeric entry is required).

Below is given a complete list of headers (**Shown in Bold Underline**), with the options available below it.

Headers & Options

Program Zones

Zone Types
 Zone Descriptors
 Zone Wiring
 Zone Attributes
(Test/Part/Chime/Cleaner/Walk)
 Zone Double Knock/Arm/Log
 Zone E/E Mode
 Walk On/Off (FWT)
 Walk Bypass Time (FWT)

Setting Modes

Setting For Full Sets
 Setting For Part 1 Sets
 Setting For Part 2 Sets
 Setting For Part 3 Sets
 Setting Delay
 Setting Sounders
 Setting Conformation
 Auto Part Set

Headers & Options

Entry Times

Entry Time 1
 Entry Time 2

Bells / Sounders

Bell Type/No Arms
 Bell Delay
 Bell & Sounder Ring
 Bell Tamper Mode
 Bell For Part Set

Keypad / Keyswitch

Keypad Alert 1 Keys
 Keypad Alert 2 Keys
 Number of Keypads
 Multi Keypad Option
 Keyswitch Type
 Keypad Backlight Mode

Headers & Options

Digicom

Type or Test
Start Delay
Channels
Digicom Functions
(Digigard / ProDigi /Modem)

Line Fault Modes

Line Fault Sounders
Line Fault Mode in Exit
Line Fault Log Mode

Panic / Duress

PA Mode
Testable / Non-Testable
Duress On/Off

Relay / PGM3 / Timers

Onboard Relay Mode
Timer 1 On Time
Timer 1 Off Time
Timer 2 On Time
Timer 2 Off Time
Timer 3 On Time
Timer 3 Off Time

Reset Modes

Alarm 1 Reset
Alarm 2 Reset
Alarm 3 Reset
Tamper Reset
Remote Reset On/Off
Remote Reset Source
Alarm Restore (Immediate)
Abort Time

Headers & Options

Sounder Levels

Chime Level
Entry/Exit Level
Key Beep Level

Sens./ Xp/Custom

Sensor Output (Det Reset)
Expander 1 O/P1 1 For LED
Expander 1 O/P2 2 For LED
Expander 1 O/P3 3 For LED
Expander 1 O/P4 4 For LED
Expander 2 O/P1 5 For LED
Expander 2 O/P2 6 For LED
Expander 2 O/P3 7 For LED
Expander 2 O/P4 8 For LED
Expander 3 O/P1 9 For LED
Expander 3 O/P2 10 For LED
Expander 3 O/P3 11 For LED
Expander 3 O/P4 12 For LED
Expander 4 O/P1 13 For LED
Expander 4 O/P2 14 For LED
Expander 4 O/P3 15 For LED
Expander 4 O/P4 16 For LED

Custom Output 1
Custom Output 2
Custom Output 3
Custom Output 4
Custom Output 5
Custom Output 6
Custom Output 7
Custom Output 8

Engineer Code

Engineer Code
Engineer Code Locked/Unlocked

Headers & Options**Engineer Code**

Engineer Code
Engineer Code Locked/Unlocked

Service

Service Timer On/Off
Time To Next Service
Service Tel No.
Lock-Out On/Off
Engineer Mode Constant/Timed

Review

Review
Print Settings

Custom Screens

Status Display
Custom Display
Custom Text

Diagnostics / Log

List Event Log
Change List Diagnostics

Headers & Options**Alarm Confirm**

Window Time
On Entry
Sounder Mode
Reset Mode
Secondary Time
ET Mode
Bell Mode
Strobe Mode
Start Delay
Ace Battery Monitor
Comms Restore
Keypad Opening

Event Log

View Event Log
Print Event Log

7 SPECIFICATION & RECORDS

GardTec 872 Control Panel Specification

Power Input 230V a.c +/- 10% @ 50Hz

Max Loop Resistance 2K (not with E.O.L)

Loop Delay Time 600 milliseconds

FUSES

Bell 1A Quick Blow

R.K.P 500mA Quick Blow

Aux 1A Anti-surge

Gard 400mA Quick Blow

Mains 125mA Anti-surge

Low Voltage Output 13.8 Regulated

Battery Sizes 12V 1.2A, 2.0A, 3.0A, 7.0A

Construction 3mm Polycarbonate

or

1.2mm Mild Steel

Complies With BS 4737 Parts 1 & 2

CE tested

Conforms with EMC Directive 89/336/EEC & LVD Directive 73/23/EEC

Number Of Zones
(Standard) 8 (4 Wire), 16 (E.O.L or 2 Wire)

Expandable To 80 (4 Wire), 144 (EOL or 2 Wire)

Expansion Type Expander Cards with 4 (4 Wire) per card
Zones or 8 (E.O.L or 2 Wire) per card
Zones Per Card
1 Radio Expander may be fitted allowing 2 Receivers may
be fitted in place of Expander 8 & 16 (if required)

or

ID Expander Cards (Max2)

30 ID zones per Expander

(Panel zones as normal)

Radio Expander cannot be used with ID

Number Of Keypads	4 Normal
	or
	8 using Multi Option
ACE compatible	Yes
Onboard Relay Rating	24V 1A S.P.C.O
Zone Descriptors	16 Characters (last 3 omitted with tamper)
Max No of Users	99 + Engineer
Default Codes	Eng 1234 User 5678
Code Length	4, 5 or 6 Digits
User Names	9 Characters
Custom Screen	32 Characters
Log Size	752 Event Log 256 Event Modem Log
Time & Date	Log & Display
Non-Volatile Memory	Yes

Quiescent Currents

Control Panel	80mA @ 12V d.c
LED RKP	40mA @ 12V d.c
LCD RKP	30mA @ 12V d.c
Zone Expander Card	10mA @ 12V d.c (Max 16 Per System)
Radio Expander Card	15mA @ 12V d.c (One per system allowing 2 receivers)
Radio Receiver	40mA @ 12V d.c
Output Expander Card	40mA @ 12V d.c (Max 4 Per System)
Digigard Communicator	15mA @ 12V d.c
ProDigi Communicator	80mA @ 12V d.c
GardTec 840 Modem	80mA @ 12V d.c
GardTec Speech Dialler	80mA @ 12V d.c

System Settings Record					
Zone No.	Descriptor	Area(s)	Loop Ohm	V @ Sensor	Part Info
Example	Living Room	1&2	14 AZ 4 TZ	13.2V	A1 P1
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					

Zone No.	Descriptor	Area(s)	Loop Ohm	V @ Sensor	Part Info
44					
45					
46					
47					
48					
49					
50					
51					
52					
53					
54					
55					
56					
57					
58					
59					
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80					
81					
82					
83					
84					
85					
86					
87					
88					
89					
90					

Zone No.	Descriptor	Area(s)	Loop Ohm	V @ Sensor	Part Info
91					
92					
93					
94					
95					
96					
97					
98					
99					
100					
101					
102					
103					
104					
105					
106					
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125					
126					
127					
128					
129					
130					
131					
132					
133					
134					
135					
136					
137					
138					

Zone No.	Descriptor	Area(s)	Loop Ohm	V @ Sensor	Part Info
139					
140					
141					
142					
143					
144					
145					
146					
147					
148					
149					
150					
151					
152					
153					
154					
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177					
178					

Page 80

8 MISCELLANEOUS

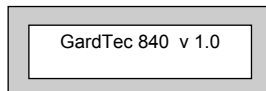
Resetting to Factory Defaults

When resetting the GardTec 800 Series to factory defaults several levels of resetting are available, these are:-

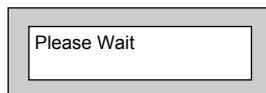
- a) Pressing **1, 9, YES, NO** during initial power up will revert the Master Code and Engineer Code (not locked engineer code) back to factory defaults.
- b) Pressing **3, 7, YES, NO** during initial power up will revert all system settings back to defaults with the exception of the User Names and Zone Descriptors.
- c) Pressing **4, 6, YES, NO** during initial power up will revert all system settings back to factory defaults.
- d) Pressing **5, 5, YES, NO** during initial power up will revert all system settings to factory defaults and will also set the comms options up for GardTec Remote. ie Modem On; No Return. **For commissioning systems for use with GardTec Remote use this option.**

To effect a reset of the factory defaults:-

- 1) Remove all power from the system for at least ten seconds
- 2) Apply power to the control panel (mains power)
the display will show for example:-
(Display will differ dependant on panel)

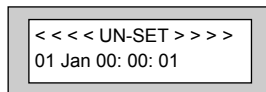


- 3) Whilst this display is showing (the first eight seconds) press the keys shown in a, b or c for the reset required, the display will show:-



This may show for several minutes.

- 4) The display will then show:-



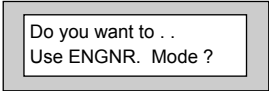
Temporary access may be gained to the factory defaults by removing Lk6 (Reset) on the main PCB, the link must be replaced before any programming is commenced, this option will have no effect if the engineer code is locked.

Engineer Reset After An Alarm

If a system is programmed for engineer reset it will be necessary for the engineer to attend the system. After the engineer has confirmed the integrity system the system should be reset as follows:-

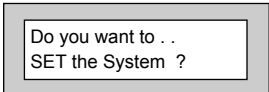
- 1) **The system must be unset Unset, by a user code.**

Enter the engineer code, the display will show:-



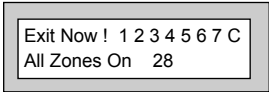
Do you want to . .
Use ENGR. Mode ?

- 2) Press NO, the display will show:-



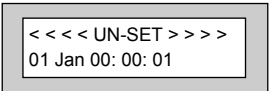
Do you want to . .
SET the System ?

- 3) Press YES, the display will show:-



Exit Now ! 1 2 3 4 5 6 7 C
All Zones On 28

- 4) Enter the engineer code again to abort the setting, the display will show:-



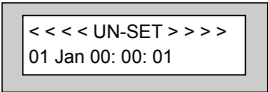
<<<< UN-SET >>>>
01 Jan 00: 00: 01

- 5) The system is now Unset.

Diagnostics

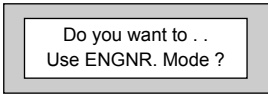
The GardTec 872 control panel has several engineering diagnostic features available via an LCD keypad. To access these diagnostics follow the steps below

- 1) With the display showing:-



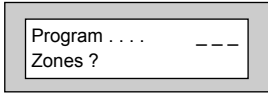
<<< UN-SET >>>
01 Jan 00: 00: 01

- 2) Enter the Engineer code (1234 default)
The display will show:-



Do you want to . .
Use ENGR. Mode ?

- 3) Press YES. The display will show:-



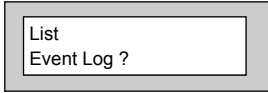
Program ----
Zones ?

- 4) Press NO until the display shows:-



Program/ List --
Diagnostics / Log ?

- 5) Press YES. The display will show:-



List
Event Log ?

- 6) Press NO. The display will show:-

Change / List
Diagnostics ?

- 7) Press YES. The display will show for example:-

Battery Test
= 01 Hrs

- 8) Press YES. The display will show for example:-

Aux. Volts
13.6

- 9) Press YES. The display will show for example:-

Battery Volts
On Charge 13.0V

- 10) Press YES. The display will show for example:-

Battery Volts
Off Charge 12.8V

- 11) If no Novagard Active Sounders are fitted/programmed
the display will return to step 5

Or

If at least one Novagard Active Sounder is fitted/
programmed the display will show:-

Select NovActive
1 - 8

- 12) Press the number of the Novagard Active you
wish to test. The display will show:-

Refresh Data ?

- 13) Press YES. The display will show:-

Please WAIT

Then:-

00 = No Tamper 01 = Front Tamper
02 = Rear Tamper 03 = Front & Rear Tamper

Fault Status =
00

- 14) Press YES. The display will show for example:-
(for Novagard Active battery)

On-Charge (V)	=
9.6	

- 15) Press YES. The display will show for example:-
(for Novagard Active battery)

On-Charge (V)	=
8.4	

- 16) Press YES. The display will show for example:-
(for Novagard Active hold-off volts)

Hold-Off (V)	=
13.6	

- 17) Press YES. The display will show for example:-
(for Novagard Active sounder current)

Bell (mA)	=
270	

- 18) Press YES. The display will show for example:-
(for Novagard Active strobe current)

Strobe (mA)	=
109	

- 19) Press YES. The display will show for example:-
(for Novagard Active charge current)

Charge (mA)	=
10	

- 20) Press YES. The display will show for example:-
(for Novagard Active quiescent current)

Static (mA)	=
25	

- 21) Press YES. The display will show for example:-

Fault Status	=
00	

This concludes the Diagnostic Tests. To Escape
Press 0 until the display shows:-

< < < UN-SET > > >
01 Jan 00: 00: 01

Note: If battery test is programmed other than 00 a battery test will be performed each time you escape from engineer mode.

Zone Programming Tutorial

Below is a Zone Programming Tutorial that shows how a single zone is programmed. This should be repeated for all zones that require programming.

- 1) With the display showing:-

```
<<<< UN-SET >>>>
01 Jan 00: 00: 01
```

- 2) Enter the Engineer code (1234 default)
The display will show:-

```
Do you want to . .
Use ENGNR. Mode ?
```

- 3) Press YES. The display will show:-

```
Program . . . . . ---
Zones ?
```

- 4) Press Yes. The display will show:-

```
Program Zone
Types ?
```

- 5) Press Yes. The display will show:-

```
Enter Zone #   _ _ _
```

- 6) Enter the zone number you wish to program
e.g 1 followed by Yes. The display will show
for example:-

```
001 = Ent/Ex      A =
1                 = Remove -
```

- 7) Press No. The display will show:-

```
001 > Ent/Ex      A =
1                 = Remove -
```

- 8) Note the chevron has now appeared before
the Ent/Ex. This is the Zone Type, now press
No until the Zone Type you require is displayed.

**A description of the Zone Types available is
given on page 53 in this manual**

- 9) Press Yes. The Zone Type you have chosen will be accepted and the chevron will move along to the last character on the top line:-

001 = Ent/Ex	A >
1	= Remove -

- 10) We are now programming what Area(s) the Zone will be allocated to. By default all zones are allocated to Area 1.

At this point the number keys 1 to 7 have a toggle action, pressing number 2 now will add Zone 1 to Area 2 as well as Area 1, pressing 2 again will remove the zone from Area 2.

Note: A zone may be allocated to a single Area or multiple Areas.

When the Areas you require are displayed Press Yes. The display will show for example:-

001 = Ent/Ex	A >
13 7	> Remove -

Don't forget to program user codes for all the Areas you have used.

- 11) The chevron has now moved to the attribute for Zone 1. The attributes available are given on pages 54 & 55 within this manual. Press No until the attribute you require is displayed. Then Press Yes. The display will show for example:-

002 = Access	A =
1	= Remove -

- 12) This is now Zone 2 programming. To continue programming this (and other) zone(s) repeat from step 7

To exit from Zone programming press 0 until the display shows:-

< < < UN-SET > > >
01 Jan 00: 00: 01

Appendix 1

Using Point ID

The ProDigi Communicator or GardTec Modem from GardTec may, if required be used to allow Point ID communication with the GardTec 872. When used in this mode the ProDigi/Modem will use the Ademco Point ID Protocol.

Point ID allows for the transmission of zone and detector types to be transmitted along with the alarm information. This qualifies as sequential verification as recommended by the 1995 ACPO policy.

To use Point ID the ProDigi/Modem should be connected to the GardTec 872 via the serial lead that is supplied with it (this is shown in Fig 16 on page 25).

To use the communicator in Point ID mode and program the relevant functions, the control panel needs to be told that it is to use the ProDigi as a Point ID communicator. This is done via option 34 in the engineer options (Digicom Type), which should be changed to:-

Digicom Type.....

= Point ID or Mod+PID for the Modem

If using an LED type keypad to select Point ID:-

With the display showing E- press 34 followed by YES

Then press NO 03 (or 04 for Modem) followed by YES

It should be noted that although you are able to turn on the Point ID function via an LED keypad you will not be able to program the Digicom functions unless you are working via an LCD keypad. This allows for a pre-programmed ProDigi to be fitted onto an existing system with LED only keypads.

When using the ProDigi or Modem with the GardTec 872 control panel you will be able to use the ProDigi as a Point ID communicator or fast format communicator. It is not possible to use both formats at the same time.

New Log Events

Two new log events have been added with the implementation of Point ID these are:-

Alarm Abort

The LCD display will show "Alarm Abort" along with the time and date whilst the LED will show " AA "

Test Call

The LCD display will show "Test Call Sent" along with the time and date whilst the LED display will show " tC "

Access to programming the Point ID event actions is gained through the "Program Channels " options. After D1 & D2 and the polarity options have been programmed the following new options will be presented for programming.

Note: All these options are defaulted to off and should be turned on as required.

Set	Alrm	Unset	PA
24Hr	E/E	12Hr	Bat
Tamp	AC	LF	Alert
Fire	W/D	Duress	
Zone Remove	Alrm-Restore	Zone Exclude	PA Restore
AC-Restore	LF-Restore	After Alarm	
After-Alarm	Abort-Call		

If the After Alarm option is turned on Point ID reports for all options are sent regardless of whether they are turned on or off following the first alarm event. This will continue until an Set/Unset event takes place. Note: Alrm=On must be programmed for this option to work.

Note: Options that are turned on will send messages regardless of alarm status.

Note: Power-Fail refers to Aux Fuse fail and will reported as Lo-Batt to the central station.

Note: Part-Sets will be reported as Armed Stay to the central station

Note: Output Module tampers will be reported as Expansion Module Tamper to the central station.

Engineer Code Entered

New Log Event of Engineer Code Entered has been added.

Digi Functions**Programming With Point ID**

All normal Digi functions should be programmed as usual with the exception of the following items that have no function with Point ID protocol.

O/C Channel Select

Restore Report Channel Select

Input Mapping and Polarity

580 Re-mapping

Tone Security Option

The option of Tone Security has been added to the ProDigi. This option is only applicable when the ProDigi is being used in Point ID mode. When the option is set to 'Tone Security = High' a tone test will occur after any command is used (e.g Set, Unset, Code Entry). This is in addition to the Tone Test using the Tone Test Time option.

GardTec 872 & DD243 : 2002

From the 1st July 2002 DD243 2002 will come into effect in England, Wales and Northern Ireland replacing the 1999 policy. All communications systems that require a Police URN will need to conform to DD243:2002.

This document is intended to help installers of the GardTec 872 control panels understand the new features that have been incorporated into the panels and use them to ensure that the system complies to the new DD243:2002 requirements. **The advanced DD243 features must be programmed via a LCD keypad.**

This document is intended as a guide only and should be read in conjunction with the relevant standards relating to the alarm system giving particular attention to BS 4737 and DD243. These may be obtained from the British Standards Institute.

To program the confirm options on the GardTec 872 enter engineer mode (1234 default followed by YES) the display will show 'Program Zones' press NO until the display shows 'Program Alarm Confirm' press YES to enter into this section.

The first option will be

Confirm Time Window (default = 60)

This time window may be programmed between 1 and 120 minutes. To comply the required time should be between 30 and 60 minutes.

See 5.4.1 DD243:2002 Criteria for sequentially confirmed alarm conditions.

Confirm on Entry (default = On)

This option may be programmed to On or Off. If Confirm on Entry = Off then confirmed alarms to central station are disabled if the entry timer is started. If ACE is used then it is permissible to set this option to On.

See 6.4.4 DD243:2002 Opening the initial entry door disables all means of conformation.

Sounder Mode (default = Unconfirmed)

This option controls the system speakers fitted, options are confirmed or un-confirmed. If Sounder Trigger = Confirmed then internal sounder will only trigger with a confirmed alarm.

If Sounder Trigger = Unconfirmed then internal sounders will trigger with un-confirmed alarms.

This feature is not mandatory for DD243

Reset Mode (default = Any)

Choose from Any or Normal.

If Unconfirm = Any then any code can be used to reset an un-confirmed alarm.

If Unconfirm = Normal then the programmed reset mode for alarm will still be required i.e. if alarm reset has been programmed as engineer and Unconfirm reset is Normal then an engineer reset will be required for Un-confirmed alarms.

See A.4 DD243:2002 Resetting following an alarm condition.

Confirm Secondary Time Window (default = 60 minutes)

This time window may be programmed between 1 and 120 minutes we would suggest a time between 30 and 60 minutes but should typically be the same time as the confirm time window. This option affects zones that have been allocated as secondary zones only. For functionality please refer to Secondary Zones Below.

ET (Exit Terminator) Mode (default = Set)

If ET Mode = Set then the exit terminator zone will terminate the exit procedure.

If ET Mode = Door Lock and the ET zone (door lock) is operated on entry then all confirmed alarms will be disabled.

See 6.4.3 DD243:2002 Unlocking the initial entry door disables all means of conformation.

Bell Mode (default = Unconfirmed)

This option controls the bells fitted to the system, options are confirmed or unconfirmed.

If Bell Trigger = Confirmed then Bell will only trigger with a confirmed alarm.

If Bell Trigger = Unconfirmed then Bell will trigger with un-confirmed alarms.

This feature is not mandatory for DD243

Strobe Mode (default = Unconfirmed)

This option controls the Strobe(s) fitted to the system, options are confirmed or unconfirmed.

If Strobe Trigger = Confirmed then Strobe will only trigger with a confirmed alarm.

If Strobe Trigger = Unconfirmed then Strobe will trigger with un-confirmed alarms.

This gives the ability to show to the keyholder from outside the premises that a previously unconfirmed alarm has is now confirmed.

This feature is not mandatory for DD243

Confirmed Start Delay (default = 000m)

May be programmed between 0 & 120 minutes (default 0).

If programmed to anything other than 0 the panel cannot send confirmed signals until the time programmed has expired. This time starts when the system has set and will prevent confirmed alarms being generated in situations when a person has been accidentally locked in the building.

This feature is not mandatory for DD243

Ace Battery monitor (default = On)

Options are On or Off. This option allows for the use of new control panel boards with V5.1 or later software to be used with earlier keypads. If older non DD243 compliant type keypads are used with V5.1 or later this option should be programmed to Off. It is a requirement of DD243 2002 that when using ACE Low Battery is reported to the end user if the system is set using ACE.

See A.1 DD243:2002 Portable ACE used for setting and unsetting.

Comms Restore

For DD243 systems this option should be on (default setting On). With the option On the alarm channel will be restored at the end of the time programmed in Confirmed Time Window.

Keypad Opening

Options available are:-	Always On	Keypad is always active.
	Off in Entry	Keypad will not operate during Entry Times 1 & 2. Once Entry Time has expired the keypad may be used.
	Off in Ent/Alm	As above + Once the Entry Time has started and expired (system in alarm) the keypad will be disabled.

If a non Entry Exit zone has caused an alarm and the system is still in alarm (confirmed time window not expired) you may enter via the normal Entry point and still use the keypad

In effect this forces the use of ACE keyfobs to unset during normal entry procedure.
Duress (not user 7 duress) codes will still be active irrespective what setting is chosen.

Secondary Zones

The Program Part / Test /Chime option has now been renamed to Program Zone Attributes. Within this section you are able to allocate zones as Secondary Zones.

Secondary type zones would be used for detectors that may be deemed as having an over sensitive nature, this will stop unwanted user call-outs. Zones that are entered as Secondary will follow the chain of events below.

During a set period triggering a Secondary Zone will start the Secondary Time Window. This will be logged but no further action is taken. If the second zone to alarm during the same set period is also a Secondary Zone then it will be logged and the Secondary Time Window will be restarted.

If the time set within the Secondary Time Window is still running and a zone that is not allocated as a Secondary Zone is triggered the event will be logged an Alarm A (unconfirmed) and Alarm B (confirmed) will be transmitted.

This feature is not mandatory for DD243

Perimeter Zones

Within the Program Zone Attribute section you are able to allocate zones as Perimeter. Zones that are entered as Perimeter will follow the chain of events below.

When activated an unconfirmed alarm will be transmitted to the central station. An output or digi channel may be programmed as perimeter (or if using Point ID a new signal type of perimeter will be sent). This will allow central station to inform the keyholder that an unconfirmed alarm has been received and is a perimeter type device i.e window backdoor etc. etc. This feature is not mandatory for DD243.

Scenarios Relating to DD234:2002.***Sounder / Bell Considerations***

Please note careful consideration should be given when programming Confirm Sounder and Confirm Bell Modes. If both are programmed for confirmed and any of the above scenarios occur no local sounders will activate.

Other DD243:2002 Notes to Consider

When a system auto re-arms with a zone in fault condition The GardTec control panel will omit the zone concerned. A signal should be sent to the central station indicating that a detector(s) has (have) been isolated. To achieve this a Digi channel should be programmed as **Zone Exclude**, this automatically send the required signal as the detector is omitted.

See A.3.1 DD243:2002 IAS Incorporating Sequential Conformation Technology Only

New Output Option (Status)

A new output option of Status has been added, this option has three operating modes and is intended to provide a visual indication of the system status.

System Set	Output On for 10 seconds
System Unset	Output On for 1s Output Off for 1s for a 10 second period
Confirmed Alarm	Output On for 3 seconds Output Off for 1s until system reset.

It is envisaged that this status output would be fitted to an indicator (i.e. LED) that can be seen from outside the premises.

- a) Scenario specific to systems using completion of unsetting with ACE
6.4.5 DD243:2002.

Event 1	System Set
Event 2	Entry Time Starts
Event 3	Access Zone Triggered
Event 4	Entry Expired (including Entry Time 2) Unconfirmed Transmitted
Event 5	non entry/access Zone Triggered
Event 6	Second non entry.access Zone Triggered Confirmed Transmitted

To achieve the above
Confirm on entry = On
Ace Low Battery = On

- b) Scenario Unlocking the initial entry door disables all means of conformation
6.4.3 DD243:2002.

Event 1	System Set
Event 2	Entry Door Unlocked Confirmed Alarms Disabled
Event 3	Open Entry Door (entry time starts)
Event 4	Entry Time Expires (inc Entry Time 2) Unconfirmed Alarm Transmitted
Event 5	Any subsequent zones triggered No Confirmed Signals Transmitted

Or

Event 1	System Set
Event 2	Entry Door Forced Open (entry time starts)
Event 3	Entry Time Expires (inc Entry Time 2) Unconfirmed Alarm Transmitted
Event 4	non entry/access Zone Triggered
Event 5	Second non entry.access Zone Triggered Confirmed Transmitted

To achieve the above

Confirm on entry = On

ET Mode = Door Lock

Door Lock Zone programmed as ET

- c) Scenario Opening the initial entry door disables all means of conformation
6.4.4 DD243:2002.

Event 1	System Set
Event 2	Entry Door Opened (entry time starts) Confirmed Alarms Disabled
Event 3	Entry Time Expires (inc Entry Time 2) Unconfirmed Alarm Transmitted
Event 4	Any subsequent zones triggered No Confirmed Signals Transmitted

To achieve the above

Confirmed on entry = Off

Other New GardTec 872 Features

Several new features have been included into the GardTec 872 control panel, these are:-

Chime 1 & Chime 2

Within the Part/Test/Chime section. you are now able to program 2 Chime suites.

Chime Melodies

Different Chime Melodies may now be downloaded to the GardTec 872 control panel via GardTec Remote upload/download software package only.

PSU Diagnostics

It is possible to undertake various PSU diagnostic tests directly via the LCD RKP.

NovActive Diagnostics

It is possible to undertake NovActive Bell Box Diagnostic tests directly from an LCD RKP or via GardTec.

PID (Point ID Protocol)

The GardTec 872 control panels has the ability to be programmed as MOD + PID when used in conjunction with the GardTec Digi Modem or ProDigi allowing Point ID communications protocol to central station.

Exiting Engineer Mode

When you exit from engineer mode a battery test is performed. If no battery is present or the battery is flat a Fuse / Bat Fault will be generated. This option may be turned off by setting the PSU test time to 0 in the diagnostic section.

Zone Expansion

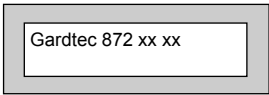
Zone Expansion for the GardTec 872 starts at zone 21 for the first expansion zone for all types of expansion options.

Modem Quick Start

The Gardtec 872 control panel may be programmed on site via the keypad or via Gardtec Remote Software. In order to program the panel via Gardtec Remote the communications needs to be initialised.

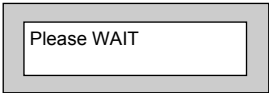
Note: Using this method will default any previously programmed settings.

- 1) Remove all power from the control panel
- 2) Apply the mains power.
- 3) Whilst the display is showing the start-up display for example



Enter 5 5 YES NO at the keypad

- 4) The display will show



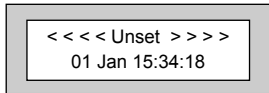
For up to 1 minute

- 5) Connect the Digi Modem to SK3 and on the Digi Modem terminals A5 & B2 to a suitable telephone outlet.
- 6) The control panel is now ready to accept a call from Gardtec Remote.

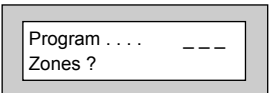
Or

Digi / Modem Set-Up

- 1) With the the control panel unset Display showing.



- 2) Enter the engineer code (1234 default) followed by YES. Display will show.



- 3) Enter 34 followed by YES display will show.

Digicom Type
= Mod + F / F

- 4) Press YES Display will show.

Test Digicom
Channels ?

- 5) Press NO four times. Display will show.

Program Digicom
Functions ?

- 6) Press YES. Display will show.

View Modem Log ?

- 7) Press NO. Display will show.

Program Modem
Functions ?

- 8) Press YES. Display will show.

Modem mode
= Off

- 9) Press NO until the display shows.

Modem mode
> No Return

(this mode allows you to dial the panel directly with no call back)

- 10) Press YES. Display will show.

Double Ring
= Off

(Basic modem is now set-up)

- 11) Press 0 (to escape). Display will show.

Program Comms
Functions ?

(Start of Comms Programming)

- 12) Press YES. Display will show.

Comms = Off

(Use 0 until display shows Unset if you don't wish to program the Comms functions).

- 13) Press NO twice. Display will show.

Comms >On

- 14) Press YES. Display will show.

Site ID Code
is Un-Programmed

*(Site ID Code is issued by central station. If you are given
a six digit code only use the last four digits)*

- 15) Press NO. Display will show.

Site ID Code

- 16) Enter your required four digit Site ID Code
followed by YES. Display will show.

Phone Number 1
is Un-programmed

- 17) Press NO. Display will show.

Phone Number 1

- 18) Enter the first (primary) telephone number
followed by YES. Display will show.

Inhibit Display
of New Number ?

- 19) Press YES or NO as required.
Display will show.

Phone Number 2
is Un-programmed

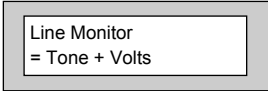
- 20) Press NO. Display will show.

Phone Number 2

- 21) Enter the second (secondary) telephone number
followed by YES. Display will show.

Inhibit Display
of New Number ?

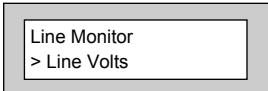
- 22) Press YES or NO as required
Display will show.
For Dedicated line use Tone + Volts.



Line Monitor
= Tone + Volts

For Shared line use Line Volts.

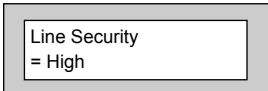
- 23) Press NO until the required setting is shown.
Display will show for example.



Line Monitor
> Line Volts

For Shared line.

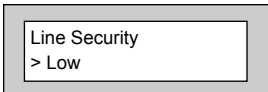
- 24) Press YES. Display will show.
For Dedicated line use High



Line Security
= High

For Shared line use Low

- 25) Press NO until the required setting is shown.
Display will show for example.



Line Security
> Low

For Shared line.

- 26) Press YES. Display will show.

*This is channel Restore Report
i.e when system is reset channel
is reported clear to Central Station*

Channel	1	2	3	4	5	6	7	8
R/Rep	0	0	0	1	0	0	0	0

- 27) Press NO. Display will show.

Channel	1	2	3	4	5	6	7	8
R/Rep	-	-	-	-	-	-	-	-

- 28) Use the 1 & 0 keys to enter the Restore Report for the channels you require. 1=on 0=off
Display will show for example.

Preferred setting

Channel	1	2	3	4	5	6	7	8
R/Rep	1	1	1	1	1	1	1	1

- 29) This concludes the basic communications programming. Press 0 several times to return to

<<< Unset >>>
01 Jan 15:34:18

Novagard Active Wiring & Programming

The Novagard Active range of external sounders offers complete compatibility with the Gardtec 872 control panel. As you would expect a variety of formats and sounder outputs are available that may be wired in standard format to all makes of control panels or in a serial format to the Gardtec 872 control panel. When wired in serial format the Novagard Active offers the following features.

Serial Connection (4 wire) to Gardtec 872 control panel.

Up to eight addressable Novagard Active bell boxes per system.

May be programmed on-site or from a remote location via Gardtec Remote Upload / Download software.

Complete Bell Box Diagnostics via Gardtec Remote including:-

Bell Hold Off Voltage.

Battery Volts On & Off Charge.

Battery Charge Current.

Quiescent Current.

Tamper(s) Status.

Sounder Current Measurement.

Strobe Current Measurement.

Engineer Bell Test Mode.

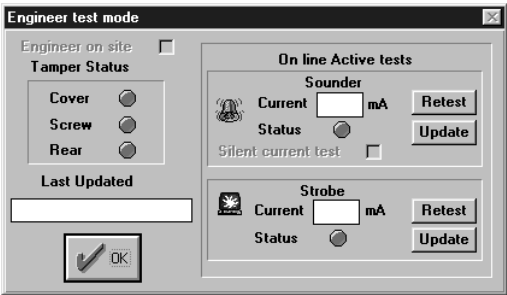
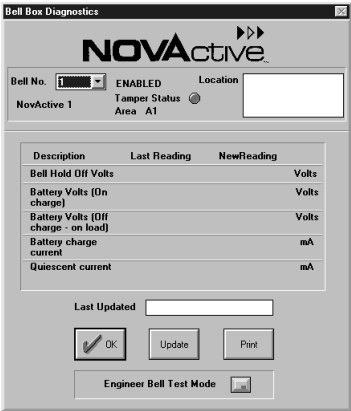
Programmable Sounders patterns for Alarm,PA and Tamper.

SAB / SCB option.

Programmable LED Patterns.

The ideal choice for split systems.

Novagard Active Diagnostic screen shots (from Gardtec Remote).

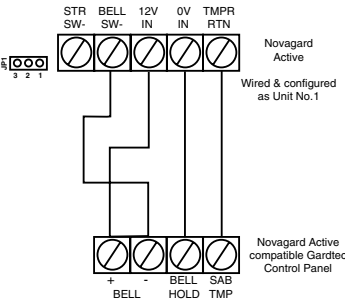


Wiring Connections & Jumper Positions.

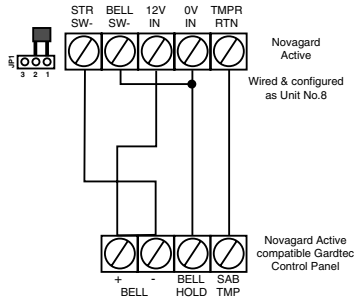
Serial Connection to Gardtec 872 control panel

Novagard Active Terminals						
	STR SW-	BELL SW-	12V IN	0V IN	TMPR RTN	JP1 POS
UNIT 1	No Connection	BELL -	BELL +	BELL HOLD -	SAB TMP	OFF
UNIT 2	No Connection	BELL -	BELL +	BELL HOLD -	SAB TMP	1 - 2
UNIT 3	LINK TO 0V IN	BELL -	BELL +	BELL HOLD -	SAB TMP	OFF
UNIT 4	LINK TO 0V IN	BELL -	BELL +	BELL HOLD -	SAB TMP	1 - 2
UNIT 5	BELL -	No Connection	BELL +	BELL HOLD -	SAB TMP	OFF
UNIT 6	BELL -	No Connection	BELL +	BELL HOLD -	SAB TMP	1 - 2
UNIT 7	BELL -	LINK TO 0V IN	BELL +	BELL HOLD -	SAB TMP	OFF
UNIT 8	BELL -	LINK TO 0V IN	BELL +	BELL HOLD -	SAB TMP	1 - 2

Unit No.1 Wiring.



Unit No.8 Wiring.



Programming

1) With the display showing:-

<<<< UN-SET >>>>
01 Jan 00: 00: 01

2) Enter the Engineer code (1234 default)
The display will show:-

Do you want to . . .
Use ENGNR. Mode ?

3) Press YES. The display will show:-

Program ---
Zones ?

This is Engineer Mode

4) Press 131 (option No.) Followed by YES the
display will show:-

NovActive = Off

5) Press NO until the display shows:-

NovActive = On

6) Press YES the display will show:-

Select NovActive
1 - 8

7) Select the unit you wish to
program. The display will show:-

NovA1 = Off LEDS = 0
Confirm = Off

8) Pressing NO will place a chevron against the
first option as shown:-

NovA1 > Off LEDS = 0
Confirm = Off

9) Press NO to select if Unit 1 is On or Off. When
finished press YES.

10) The chevron will now move to the LED option:-

NovA1 = Off LEDS > 0
Confirm = Off

Press NO to change the LED pattern, choose from

- 0 = Alternating LEDs
- 1 = Single Static LED
- 2 = Twin Flashing LEDs
- 3 = Off

When finished press YES

11) The chevron will now move to the Confirm option:-

NovA1 = Off LEDS = 0
Confirm > Off

12) Press NO to change if Confirm is On or Off.

When finished press YES

13) The display will show:-

NovA1 A1 = 1 PA = 0
Alarm = 0 Tamper = 0

14) Pressing NO will place a chevron against the first option as shown:-

NovA1 A1 > 1 PA = 0
Alarm = 0 Tamper = 0

This first option determines what area alarm the unit will activate with.

15) Press NO to change the area allocation.

When finished press YES.

16) The chevron will now move to the PA sounder pattern option:-

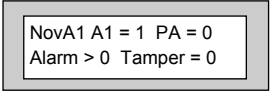
NovA1 A1 = 1 PA > 0
Alarm = 0 Tamper = 0

Press NO to change pattern
Sounder patterns available are

- 0 = Sounder Pattern 0
- 1 = Sounder Pattern 1
- 2 = Sounder Pattern 2
- 3 = Sounder Pattern 3

When finished press YES

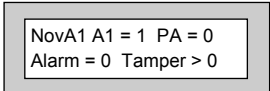
17) The chevron will now move to the Alarm sounder pattern option:-



NovA1 A1 = 1 PA = 0
Alarm > 0 Tamper = 0

18) Press NO to select the sounder pattern required as shown in step 16. When finished press YES.

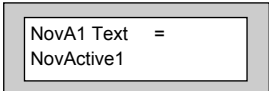
19)The chevron will now move to the Tamper sounder pattern option:-



NovA1 A1 = 1 PA = 0
Alarm = 0 Tamper > 0

20) Press NO to select the sounder pattern required as shown in step 16. When finished press YES.

21)The display will show:-



NovA1 Text =
NovActive1

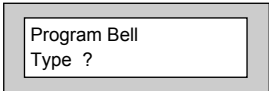
22)To change text press NO. The display will show:-



NovA1 Text =
—

23) Enter text (16 characters) in the same manner as you would zone descriptors (please refer to panel manual).

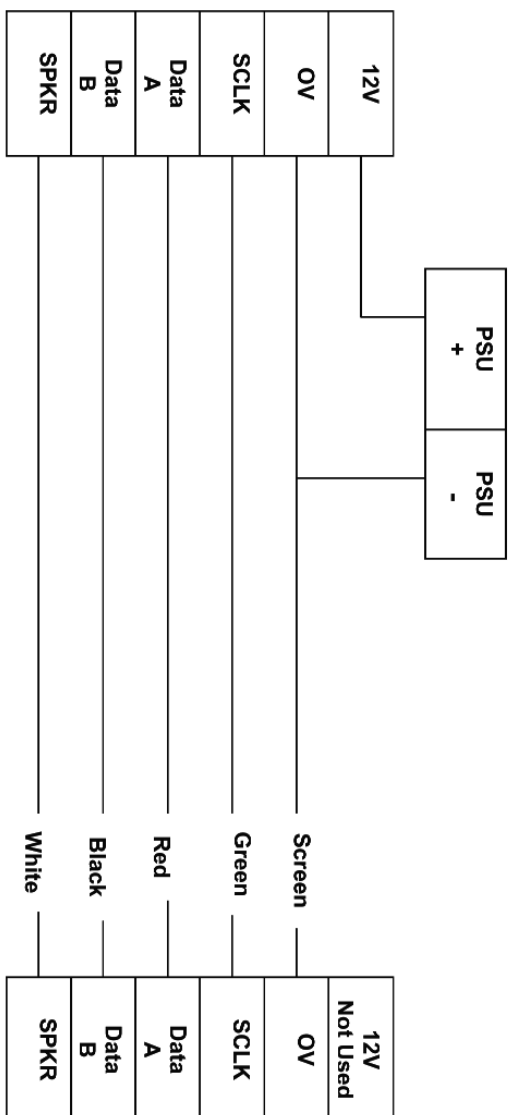
24) After the last character is entered the display will show:-



Program Bell
Type ?

25) Press 0 three times to return to the Unset condition.

Extending RKP Wiring to 500mtrs



RKP Terminals

Control Panel Terminals

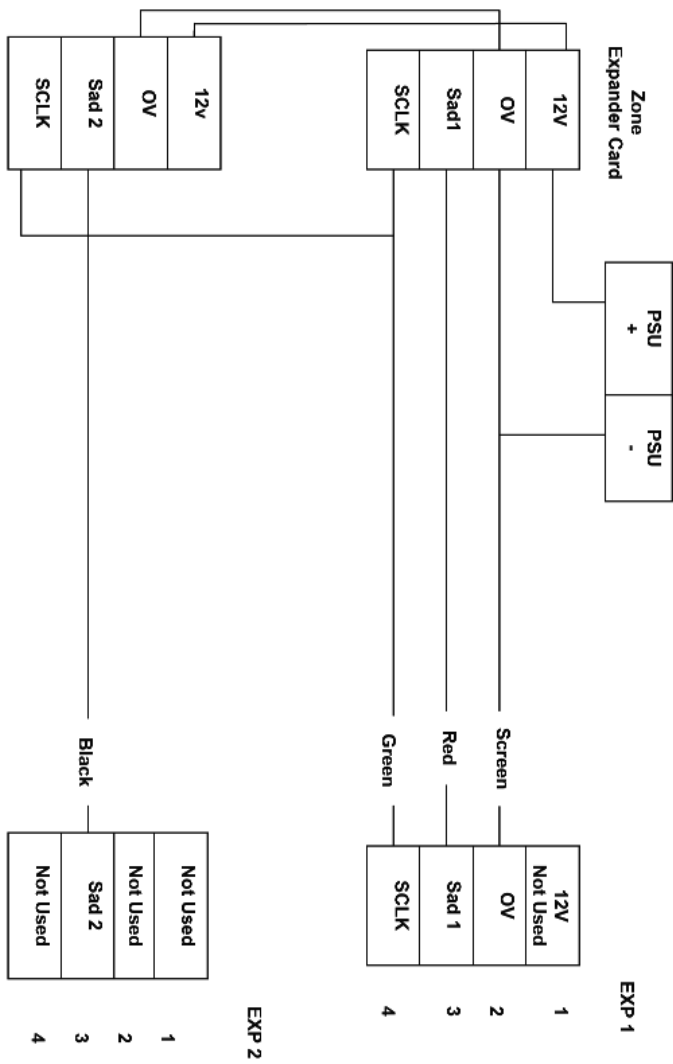
Remote Keypads can now be mounted up to 500 meters away from the gardtec 563/600 series control panels.

For the keypad to function correctly a local PSU should be fitted in the same location as the keypad.

The cable used should be Belden Cable type 8723 AF-AA 22 AWG. (7/0.25mm T/C) 4 Wire (2 Pair) Sheathed 500 meters Max (Gardtec Ltd will not guarantee this distance if the recommended cable or method is not used).

The connection for the keypad (including cable colours) must be as the drawing above.

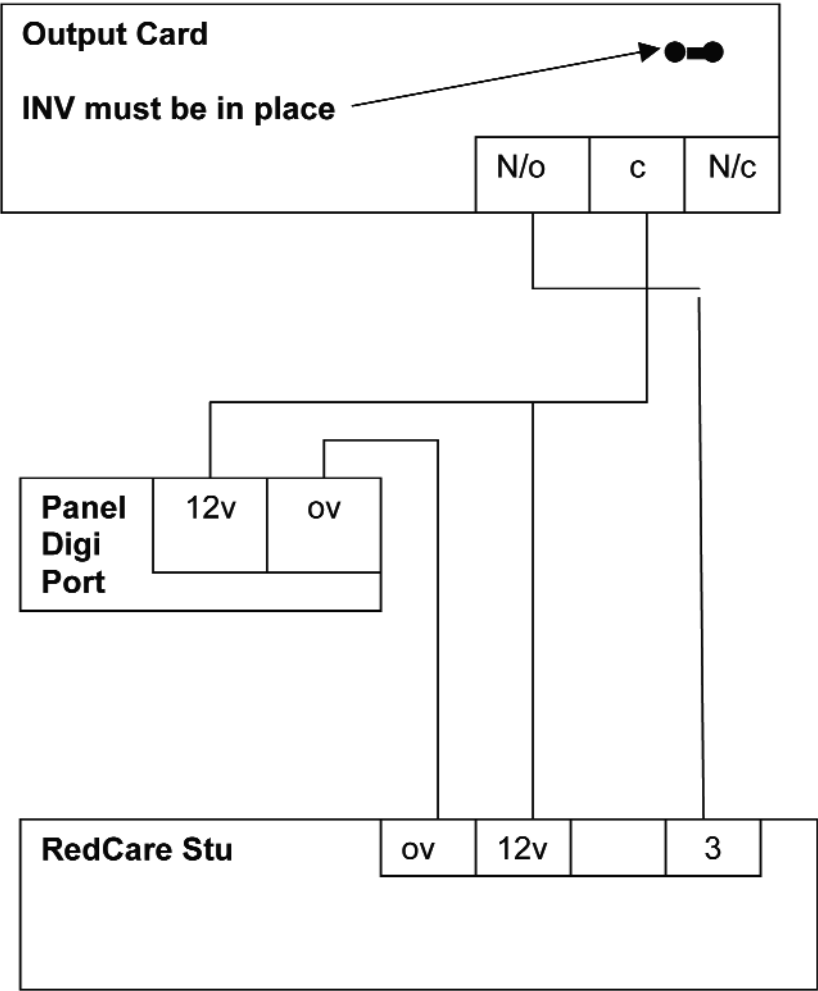
Extending Expander Wiring to 500mtrs



Zone expanders and output cards can now be mounted up to 500 meters away from the gardtec 593/816/840 control panels.
 For the zone expanders and output cards to function correctly a local PSU should be fitted in the same location as the zex/output cards
 The cable used **Must** be Belden Cable type 8723 AF-AA 22 AWG (7/0.25mm T/C) 4 Wire (2 Pair) Sheathed 500 meters Max (Gardtec Ltd will not guarantee this distance if the recommended cable is not used).
 The connection for the zex/output cards (including colours) must be as the drawing above.

Typical Secure Wiring to RedCare STU from Output Card.

The preferred method for secure Comms Channel Wiring is shown below for a single channel. The security in this format is greater than using Latch / On-board Relay / Det Reset Terminal(s) and is therefore recommended. This should be repeated for other required Outputs.





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